R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

R. Hörnemann GmbH

Osterkamp 9, Industriegebiet Holtrup, 32457 Porta Westfalica

Telefon: + 49(0)5731- 60381 Fax: + 49(0)5731- 6684

www.hoernemann-rh.de Mail: info@hoernemann-rh.de

Date 10/2019

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Contents

1 Thermocouples

2 Mineral insulated thermocouples and surface probes

3 Replacement parts

4 Resistance thermometers

5 Measuring instruments

6 Heating resistors

7 Technical characteristics

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Thermoelemente

1.1 Angle thermoelement 3/8"

1.2 Angle thermoelement 1/2"

1.3 Angle thermoelement 1/2" on flange

1.4 Straight thermocouple with head "A"

1.5 Straight thermocouple with head "B"

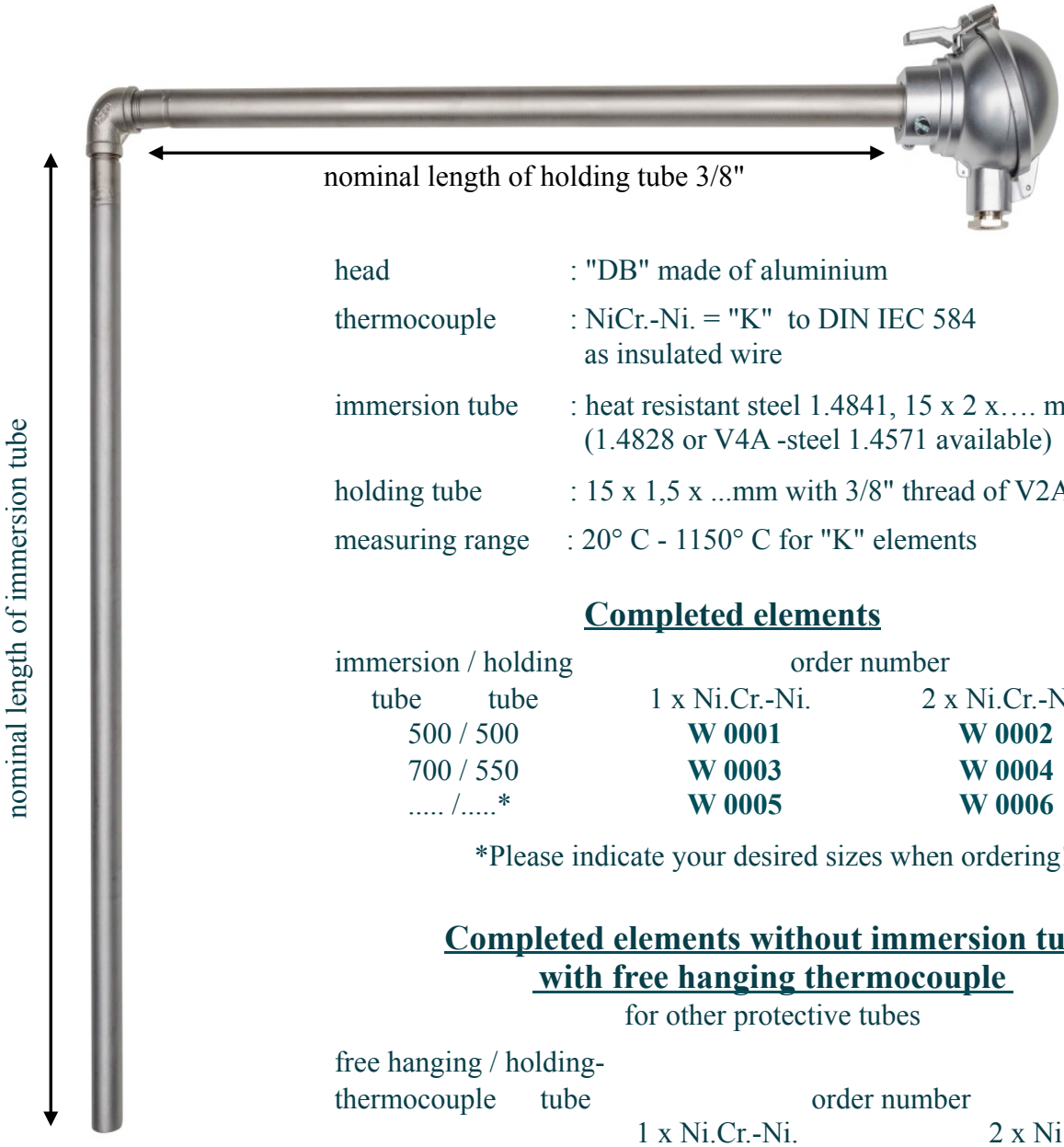
1.6 Furnace chamber thermocouple with head "A"

1.7 Furnace chamber thermocouple with head "B"

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Angle thermoelement 3/8"



head	: "DB" made of aluminium
thermocouple	: NiCr.-Ni. = "K" to DIN IEC 584 as insulated wire
immersion tube	: heat resistant steel 1.4841, 15 x 2 x…. mm (1.4828 or V4A -steel 1.4571 available)
holding tube	: 15 x 1,5 x ...mm with 3/8" thread of V2A-steel
measuring range	: 20° C - 1150° C for "K" elements

Completed elements

immersion / holding tube tube	order number 1 x Ni.Cr.-Ni.	2 x Ni.Cr.-Ni.
500 / 500	**W 0001**	**W 0002**
700 / 550	**W 0003**	**W 0004**
..... /.....*	**W 0005**	**W 0006**

*Please indicate your desired sizes when ordering!

Completed elements without immersion tube with free hanging thermocouple

for other protective tubes

free hanging / holding- thermocouple tube	order number 1 x Ni.Cr.-Ni.	2 x Ni.Cr.-Ni.
480 / 500	**W 0011**	**W 0012**
680 / 550	**W 0013**	**W 0014**
..... / .....*	**W 0015**	**W 0016**

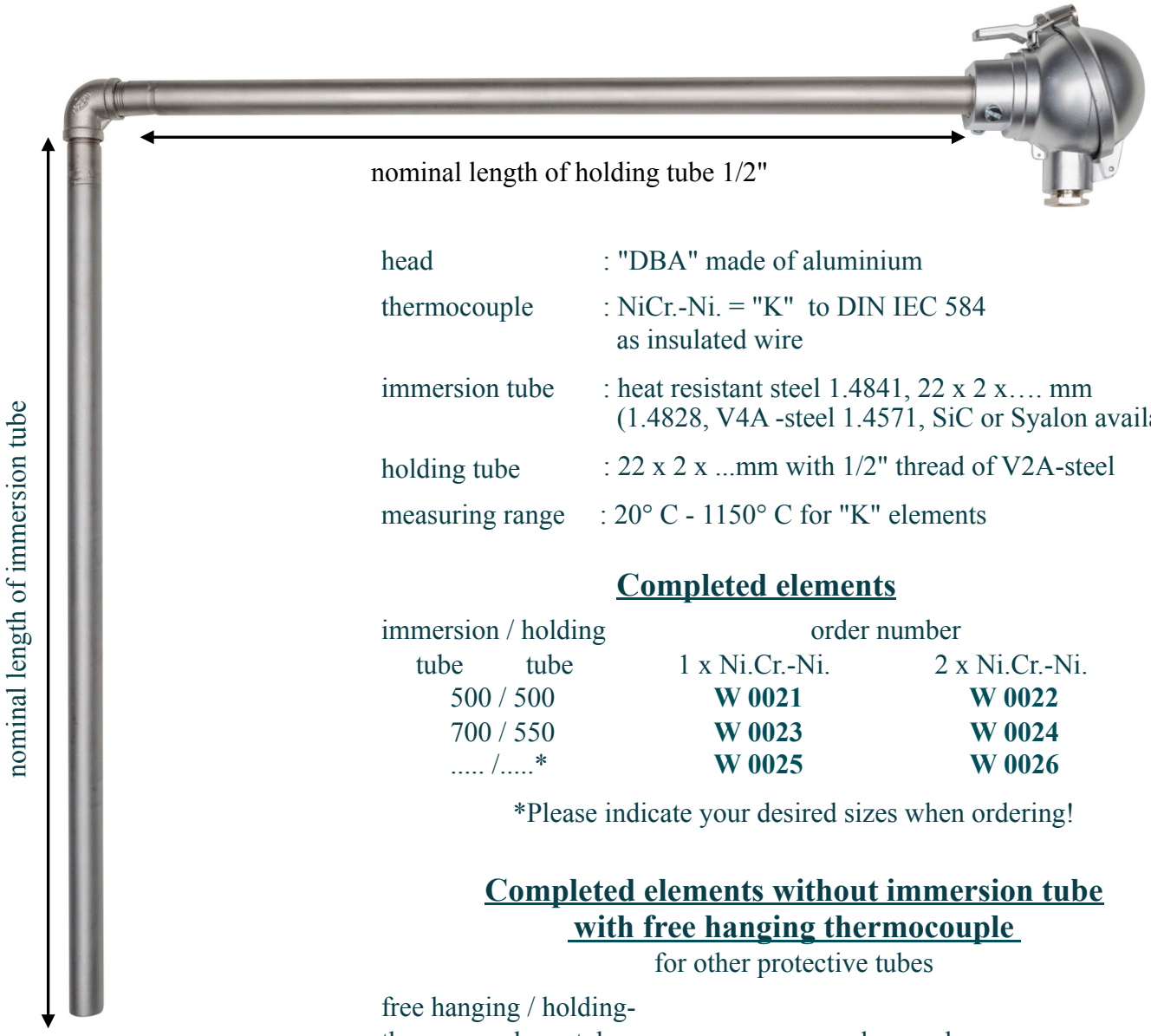
*Please indicate your desired sizes when ordering!

Please enquire other types of thermocouples
"J" = Fe.-Konst., "N"= NiCrSi-NiSi, "S" = Pt.10Rh.-Pt

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Angle thermoelement 1/2"



head	: "DBA" made of aluminium
thermocouple	: NiCr.-Ni. = "K" to DIN IEC 584 as insulated wire
immersion tube	: heat resistant steel 1.4841, 22 x 2 x…. mm (1.4828, V4A -steel 1.4571, SiC or Syalon available)
holding tube	: 22 x 2 x ...mm with 1/2" thread of V2A-steel
measuring range	: 20° C - 1150° C for "K" elements

Completed elements

immersion / holding tube tube	order number 1 x Ni.Cr.-Ni.	2 x Ni.Cr.-Ni.
500 / 500	**W 0021**	**W 0022**
700 / 550	**W 0023**	**W 0024**
..... /.....*	**W 0025**	**W 0026**

*Please indicate your desired sizes when ordering!

Completed elements without immersion tube with free hanging thermocouple

for other protective tubes

free hanging / holding-thermocouple tube	order number 1 x Ni.Cr.-Ni.	2 x Ni.Cr.-Ni.
480 / 500	**W 0031**	**W 0032**
680 / 550	**W 0033**	**W 0034**
..... / .....*	**W 0035**	**W 0036**

*Please indicate your desired sizes when ordering!

Please enquire other types of thermocouples
"J" = Fe.-Konst., "N"= NiCrSi-NiSi, "S" = Pt.10Rh.-Pt

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Angle thermoelement 1/2" on flange

head	: Form "DBA" made of aluminium
thermocouple	: NiCr.-Ni. = "K" to DIN IEC 584 as insulated wire
immersion tube	: heat resistant steel 1.4841, 22 x 2 x ... mm 1.4828, V4A-steel 1.4571, SiC or Syalon available
holding tube	: V2A 1.4541 or 1.4301, 22 x 2 x ... mm
measuring range	: 20° C - 1150° for "K"-elements

Completed elements with immersion tube

nominal length immersion / holding tube tube	order number 1 x Ni.Cr.-Ni.	order number 2 x Ni.Cr.-Ni.
500 / 500	**W 0041**	**W 0042**
700 / 550	**W 0043**	**W 0044**
..... /.....	**W 0045**	**W 0046**

*Please indicate your desired sizes when ordering!

Completed elements without immersion tube with free hanging thermocouple

for other insertion tubes

[1]tc = thermocouple

free / holding tc[1] tube	order number 1 x Ni.Cr.-Ni	order number 2 x Ni.Cr.-Ni.
490 / 550	**W 0061**	**W 0062**
690 / 550	**W 0063**	**W 0064**
..... /.....*	**W 0065**	**W 0066**

*Please indicate your desired sizes when ordering!

Please enquire other types of thermocouples "J" = Fe.-Konst., "N" = NiCrSi-NiSi, "S" = Pt.10Rh.-Pt !

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Straight thermocouple with head "DBA"

head : "DBA" made of aluminium

thermocouple : NiCr.-Ni. = "K" to DIN IEC 584
as insulated wire

immersion tube : heat resistant steel 22 x 2 x mm, 1.4841 or 1.4828, V4A-steel 1.4571, SiC or Syalon available

measuring range : 20° C to 1150° C for "K"-elements

mineral insulated thermocouple	diameter	order number
single thermocouple	3,0 mm	**G 0030MTE 30/ …**
	4,5 mm	**G 0030MTE 45/ …**
	6,0 mm	**G 0030MTE 60/ …**
double thermocouple	3,0 mm	**G 0020MTE 30/ …**
	4,5 mm	**G 0020MTE 45/ …**
	6,0 mm	**G 0020MTE 60/ …**

… please indicate your desired nominal length!

please enquire other types of thermocouples
"J" = Fe.-Konst., "N" = NiCrSi-NiSi, "S" = Pt.10Rh.-Pt

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Straight thermocouple with head "DB"

head : "DB" made of aluminium

thermocouple : NiCr.-Ni. = "K" to DIN IEC 584
as insulated wire or mineral insulated thermocouple

immersion tube : heat resistant steel 15 x 2 x mm, 1.4841,
1.4828, V4A-steel 1.4571, SiC or Syalon available

measuring range : 20° C to 1150° C for "K"-elements

mineral insulated thermocouple	diameter	order number
single thermocouple	3,0 mm	**G 0070MTE 30/ …**
	4,5 mm	**G 0070MTE 45/ …**
	6,0 mm	**G 0070MTE 60/ …**
double thermocouple	3,0 mm	**G 0060MTE 30/ …**
	4,5 mm	**G 0060MTE 45/ …**
	6,0 mm	**G 0060MTE 60/ …**

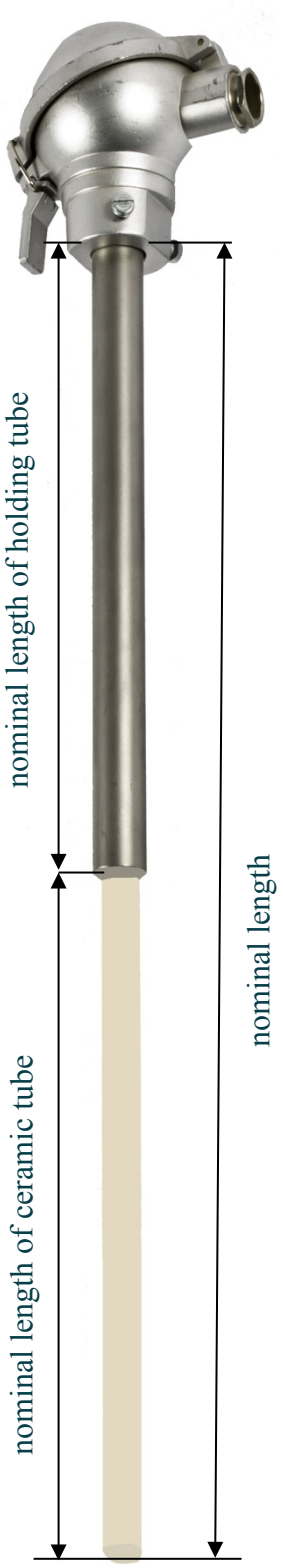
… please indicate your desired nominal length!

please enquire other types of thermocouples
"J" = Fe.-Konst., "N" = NiCrSi-NiSi, "S" = Pt.10Rh.-Pt

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Furnace chamber thermocouple with head "DBA"



head : "DBA" made of Aluminium

thermocouple : "K" = NiCr.-Ni as mineral insulated thermocouple
or "S" = Pt10Rh-Pt, 0,35 mm wire

holding tube : 22 x 2 x ... mm made of V2A-steel 1.4541,
V4A 1.4571 or made of heat resistant steel 1.4828

ceramic tube : 15/10 x ... mm made of ceramic 610 for "K" -
or ceramic 710 for "S"- thermocouples

measuring range : 20°C to 1150°C for "K" - thermocouples
20°C to 1600°C for "S" - thermocouples

Completed thermocouples type "K" / "S"

nom. length mm	hold. tube mm	free ceramic t. mm	"S" 0.35	1 x Ni.Cr.-Ni. 4,5 mm	2 x Ni.Cr.-Ni. 4,5 mm
250	150	100	**G 0100**	**G0110**	**G 0120**
300	200	100	**G 0101**	**G0111**	**G 0121**
350	200	150	**G 0102**	**G0112**	**G 0122**
400	250	150	**G 0103**	**G0113**	**G 0123**
450	300	150	**G 0104**	**G0114**	**G 0124**
500	350	150	**G 0105**	**G0115**	**G 0125**
550	400	150	**G 0106**	**G0116**	**G 0126**
600	450	150	**G 0107**	**G0117**	**G 0127**
....	.....	.....	**G 0109**	**G0119**	**G 0129**

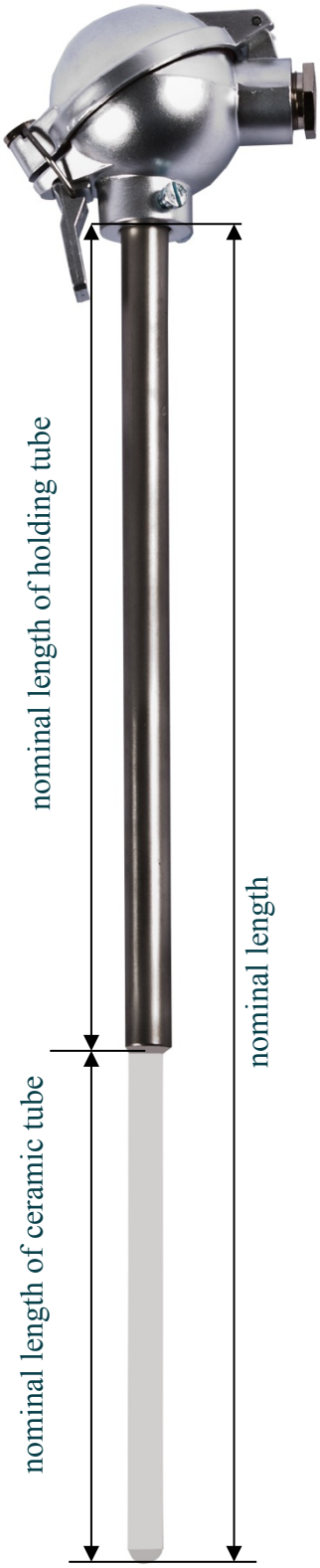
..... please fill in your desired sizes!

Please enquire other types
"J" = Fe.-Konst., "N" = NiCrSi-NiSi

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Furnace chamber thermocouple with head "DB"



head : "DB" made of Aluminium

thermocouple : "K" = NiCr.-Ni as mineral insulated thermocouple
or "S" = Pt10Rh-Pt, to 0,35 mm wire

holding tube : 15 x 2 x ... mm made of V2A-steel 1.4541,
V4A 1.4571 or made of heat resistant steel 1.4828

ceramic tube : 10/7 x ... mm made of ceramic 610 for "K"
or ceramic 710 for "S"- thermocouples

measuring range : 20°C to 1150°C for "K" - thermocouples
20°C to 1600°C for "S" - thermocouples

Completed thermocouples type "K" / "S"

nom. length mm	hold. tube mm	free ceramic t. mm	"S" 0.35	1 x Ni.Cr.-Ni. 4,5 mm	2 x Ni.Cr.-Ni. 4,5 mm
250	150	100	**G 0150**	**G0130**	**G 0140**
300	200	100	**G 0151**	**G0131**	**G 0141**
350	200	150	**G 0152**	**G0132**	**G 0142**
400	250	150	**G 0153**	**G0133**	**G 0143**
450	300	150	**G 0154**	**G0134**	**G 0144**
500	350	150	**G 0155**	**G0135**	**G 0145**
550	400	150	**G 0156**	**G0136**	**G 0146**
600	450	150	**G 0157**	**G0137**	**G 0147**
....	.....	.....	**G 0159**	**G0139**	**G 0149**

..... please fill in your desired sizes!

Please enquire other types
"J" = Fe.-Konst., "N" = NiCrSi-NiSi

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouples

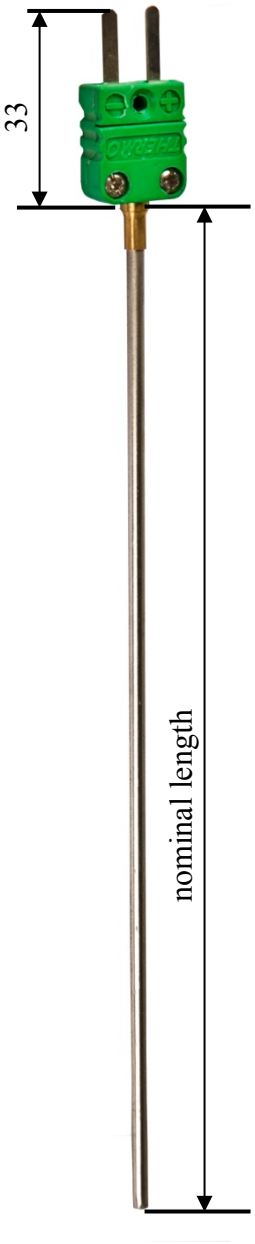
2.1	Thermocouple with mini flat plug
2.2	Thermocouple with standard flat plug
2.3	Thermocouple with free ends
2.4	Thermocouple with connecting line
2.5	Thermocouple insert for head "A"
2.6	Thermocouple insert for head "B"
2.7	Insertion probe for portable digital thermometers
2.8	Holder with standard coupler for standard connector for portable digital thermometers
2.9	Small laboratory probe for portable digital thermometers
2.10	Thermocouple with fixed screw thread
2.11	Spring loaded thermocouple with adjustable bayonet cap
2.12	Thermocouple to plug in with head "DB"
2.13	Thermocouple with screw thread and head "DB"
2.14	Thermocouple with screw thread, neck tube and head "DB"
2.15a	Surface probe with spring for portable digital thermometers
2.15b	Surface probe for portable digital thermometers

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with mini flat plug



tube material	: "Inconel" 2.4816
measuring range	: 20°C to 1150°C
thermocouple	: "K" = Ni.Cr.-Ni. to DIN IEC 584

tube diameter	1,0 mm	1,5 mm	3,0 mm
single thermocouple	**M 0003**	**M 0004**	**M 0005**
double thermocouple	**M 0006**	**M 0007**	**M 0008**

Please indicate your desired nominal length when ordering!

Please enquire other diameters or types of thermocouples like "J" = Fe.-Constantan, "N" = NiCroSil.-NiSil

Mini-coupler with strain relief

order number

Single thermocouple

mini coupler	**E 0485.GRÜN**
mini strain relief	**E 0481.ZUG**

Double thermocouple

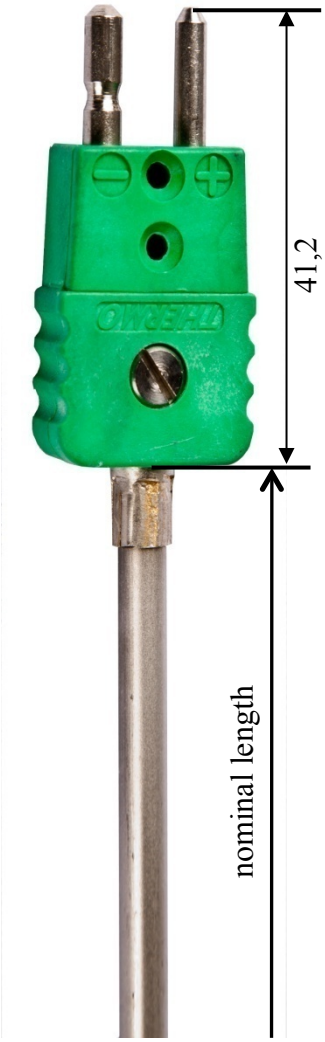
mini coupler	**E 0481.DOPPELT**
mini strain relief	**E 0481.ZUG**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with standard plug



tube material : "Inconel" 2.4816

measuring range : 20° C to 1150° C

thermocouple : "K" = Ni.Cr.-Ni. to DIN IEC 584

tube diameter	1,5 mm	3,0 mm	4,5 mm	6,0 mm
single thermocouple	**M 0010**	**M 0011**	**M 0012**	**M 0013**
double thermocouple	**M 0014**	**M 0015**	**M 0016**	**M 0017**

Please indicate your desired nominal length when ordering!

Please enquire other diameters or types of thermocouples like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

Standardcoupler with strain relief

single thermocouple order number

standard coupler **E 0474.GRÜN**

strain relief **E 0469.ZUG**

double thermocouple

standard coupling **E 0474.DOPPELT**

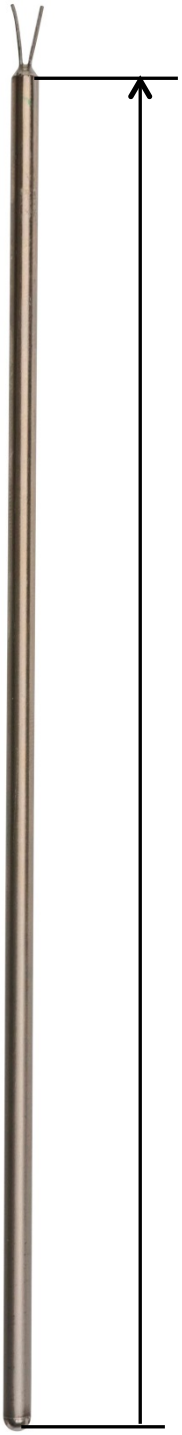
strain relief **E 0469.ZUG**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with free ends



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni

tube diameter	1,5 mm	3,0 mm	4,5 mm	6,0 mm
single thermocouple				
order number	**M 0030**	**M 0031**	**M 0032**	**M 0033**
double thermocouple				
order number	**M 0035**	**M 0036**	**M 0037**	**M 0038**

Please indicate your desired nominal length when ordering!

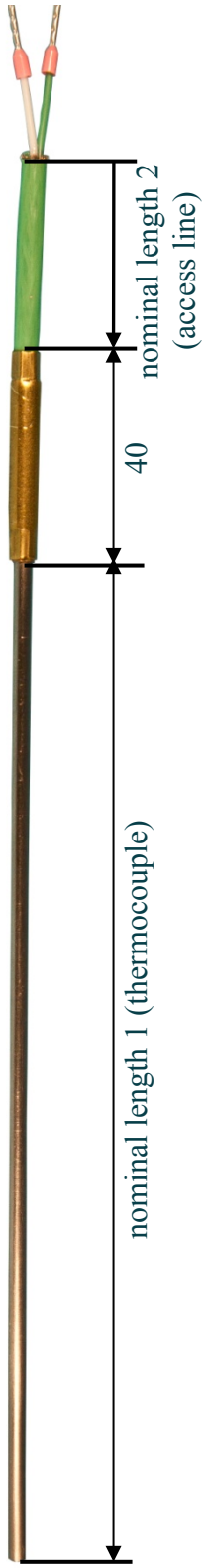
Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with access line



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni
access line	: **standard** insulated with FEP/Foil/Cu/FEP, 2 x or 4 x 0,22 mm^2 or 0,5 mm^2 **for higher temperatures (> 200 °C)** insulated with glass fibre/glass fibre/steel wire, 2 x or 4 x 0,22 mm^2 or 0,5 mm^2

tube diameter	1,5 mm	3,0 mm	4,5 mm	6,0 mm
single thermocouple				
order number	**M 0040**	**M 0041**	**M 0042**	**M 0043**
double thermocouple				
order number	**M 0045**	**M 0046**	**M 0047**	**M 0048**

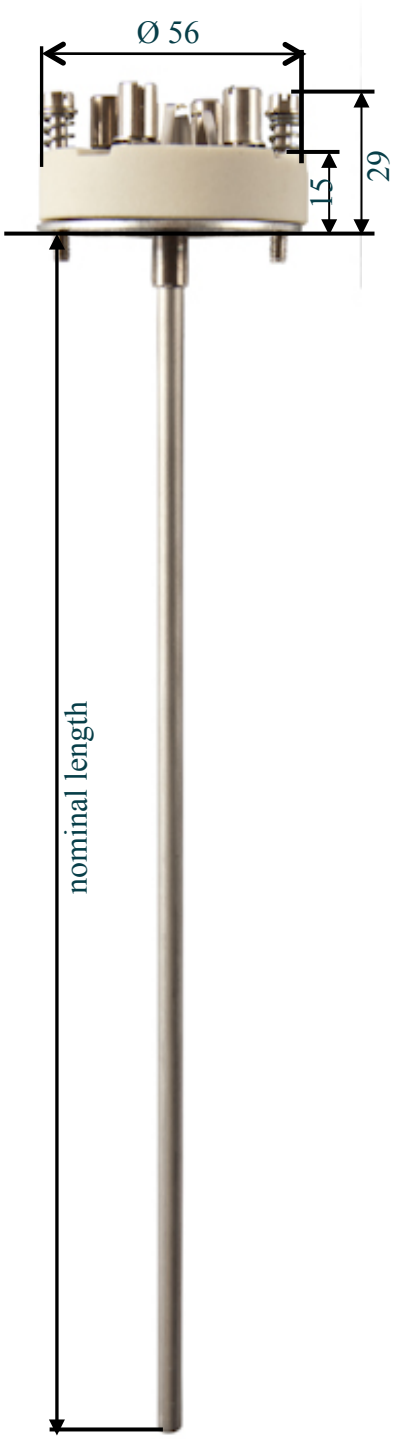
Please indicate your desired nominal lengths when ordering!

Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple insert for head "DBA"



therminal block	: for head "DBA", Ø = 56 mm
tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni

tube diameter	3,0 mm	4,5 mm	6,0 mm	8,0 mm
single thermocouple	**M 0051**	**M 0052**	**M 0053**	**M 0054**
double thermocouple	**M 0056**	**M 0057**	**M 0058**	**M 0059**

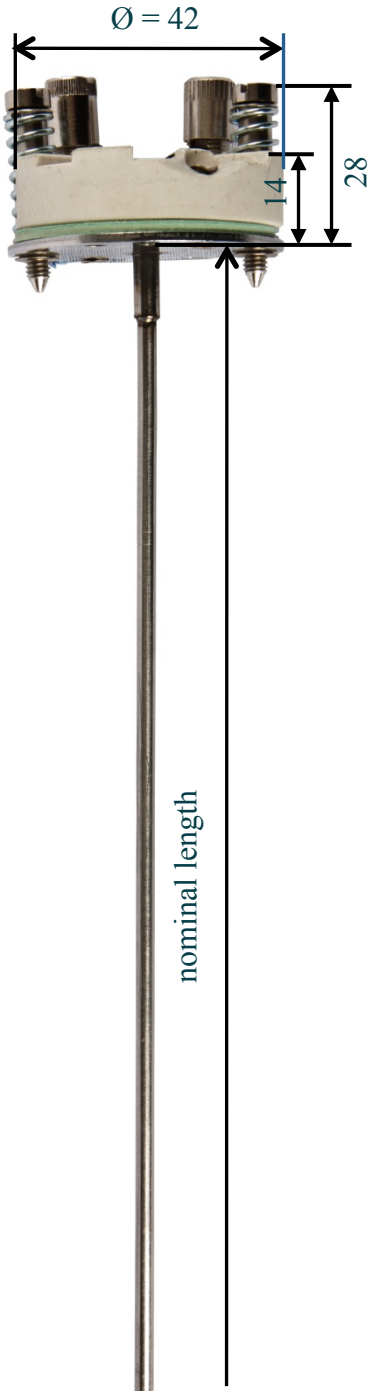
Please indicate your desired nominal length when ordering!

Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi
or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple insert for head "DB" and "DBA"



terminal block	: for head "DB" and "DBA"
tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni

tube diameter	3,0 mm	4,5 mm	6,0 mm	8,0 mm
single thermocouple				
order number	**M 0061**	**M 0062**	**M 0063**	**M0064**
double thermocouple				
order number	**M 0066**	**M 0067**	**M 0068**	**M0069**

Please indicate your desired nominal length when ordering!

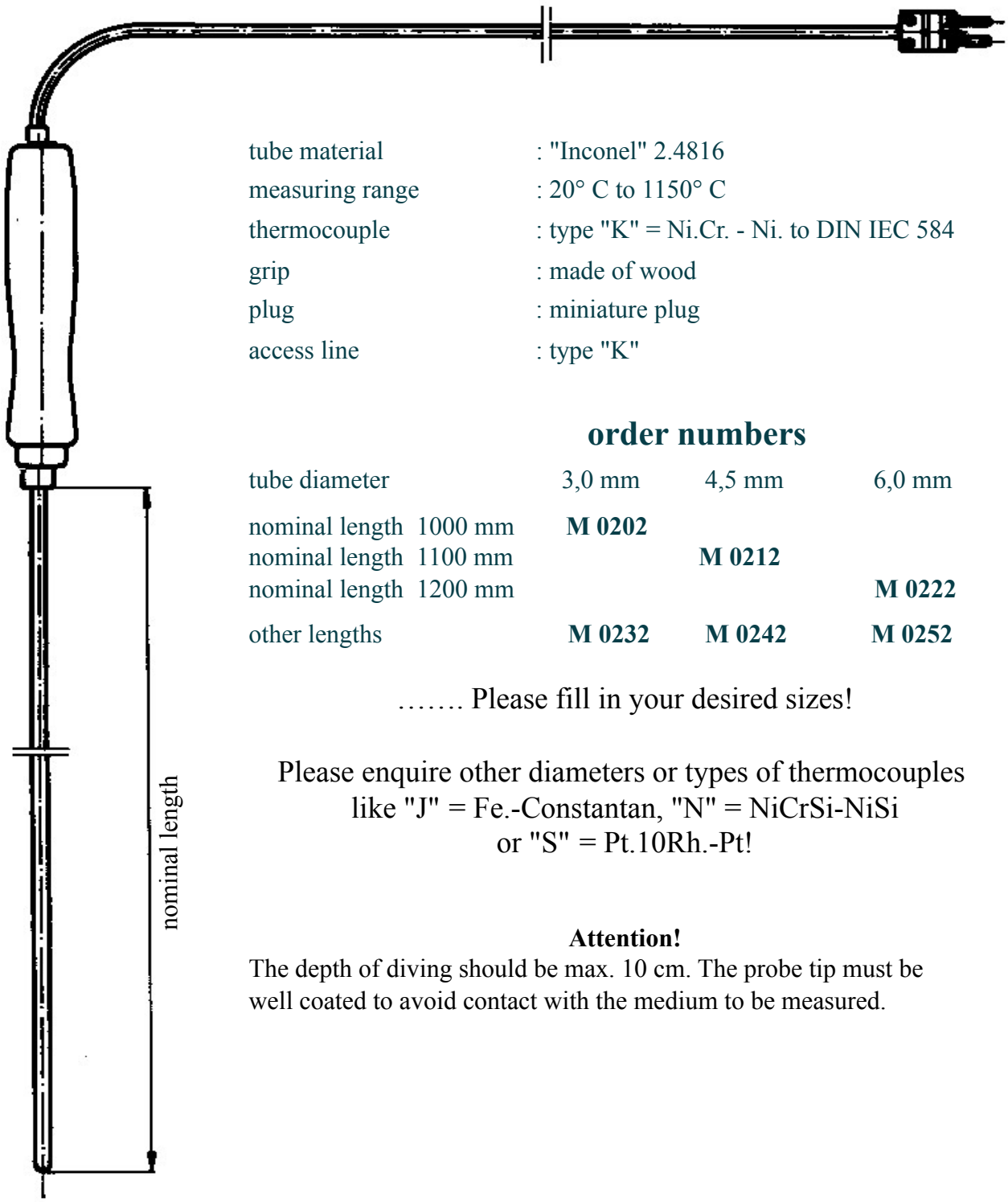
Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi
or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Insertion probe

for portable digital thermometers



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: type "K" = Ni.Cr. - Ni. to DIN IEC 584
grip	: made of wood
plug	: miniature plug
access line	: type "K"

order numbers

tube diameter	3,0 mm	4,5 mm	6,0 mm
nominal length 1000 mm	**M 0202**		
nominal length 1100 mm		**M 0212**	
nominal length 1200 mm			**M 0222**
other lengths	**M 0232**	**M 0242**	**M 0252**

……. Please fill in your desired sizes!

Please enquire other diameters or types of thermocouples like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

Attention!

The depth of diving should be max. 10 cm. The probe tip must be well coated to avoid contact with the medium to be measured.

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Holder with standard coupler

for thermocouple with standard plug
- for portable digital thermometers -

thermocouple	: "K" = Ni.Cr.-Ni. to DIN IEC 584
measuring range	: 20° C to 1150° C
grip	: made of wood
plug instrument	: mini plug
plug probe	: standard coupler
protective tube	: flexible steel tube

holder with length from grip to coupling base 300 mm	**M 0253/300**
for other lengths please fill in your desired length	**M 0253/.....**

Standard connector with mineral insulated thermocouple as probe

Ø of thermocouple	length	order number
3,0 mm	**500**	**M 0011/500**
4,5 mm	**600**	**M 0012/600**
4,5 mm	**800**	**M 0012/700**
6,0 mm	**500**	**M 0013/500**
6,0 mm	**800**	**M 0013/800**

for other lengths please indicate your desired size!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Laboratory probe

for portable digital thermometers

tube material	: "Inconel", 2.4816
measuring range - round	: 20° C to 700/800°C
measuring range − oblique	: 20° C to 600°C
thermocouple	: Ni.Cr. - Ni. = type "K" to DIN IEC 584
grip	: made of plastic or wood as desired
plug	: mini plug
access line	: spiral, insulated with PVC or straight, insulated with silicon

round design **oblique design**

tube diameter

nominal length	1,5 mm	3,0 mm	1,5 mm	3,0 mm	4,5 mm
150 mm	**M 0112**	**M 0122**	**M 0132**	**M 0142**	**M 0152**
200 mm	**M 0113**	**M 0123**	**M 0133**	**M 0143**	**M 0153**
300 mm	**M 0115**	**M 0125**	**M 0135**	**M 0145**	**M 0155**
..... mm	**M 0116**	**M 0126**	**M 0136**	**M 0146**	**M 0156**

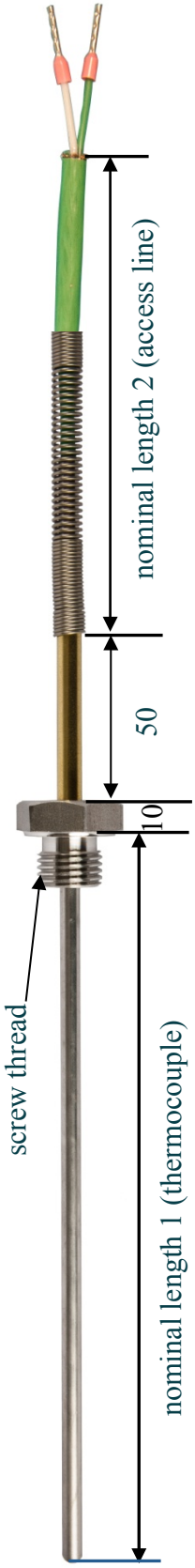
..... please fill in you desired size!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with fixed screw thread



tube material	: "Inconel", 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni
thread material	: V2A-steel 1.4541/V4A-steel 1.4571

tube diameter	thread	single probe	double probe
1,0 mm	M 8x1	**M 0300**	**M 0302**
1,5 mm	M 8x1	**M 0301**	**M 0304**
3,0 mm	M 8x1	**M 0303**	**M 0306**
4,5 mm	M 8x1	**M 0305**	**M 0308**
3,0 mm	G 1/4"	**M 0313**	**M 0316**
4,5 mm	G 1/4"	**M 0315**	**M 0318**
3,0 mm	G 1/2"	**M 0323**	**M 0326**
4,5 mm	G 1/2"	**M 0325**	**M 0328**
6,0 mm	G 1/2"	**M 0327**	**M 0330**

please indicate your desired nominal lengths when ordering!

Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

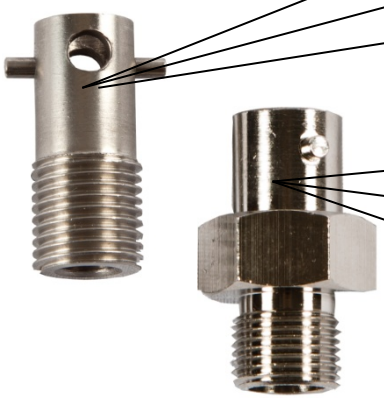
IMMER DIE RICHTIGE TEMPERATUR

Spring loaded thermocouple

with adjustable bayonet cap

material of measuring tip	: 1.4571 Edelstahl
measuring range	: max. 400°C
thermocouple	: "K" = Ni.Cr.-Ni. or "J" = Fe.-Cu.Ni. "N" = NiCrSi-NiSi to DIN IEC 584
access line	: 2 x 0,22 mm², GL / GL / ST

stay bolt diameter in mm	spring Ø / length in mm	single thermo-couple	double thermo-couple
12,0 mm	6 / 250	**M 0340**	**M 0342**
14,0 mm	8 / 180	**M 0341**	**M 0344**



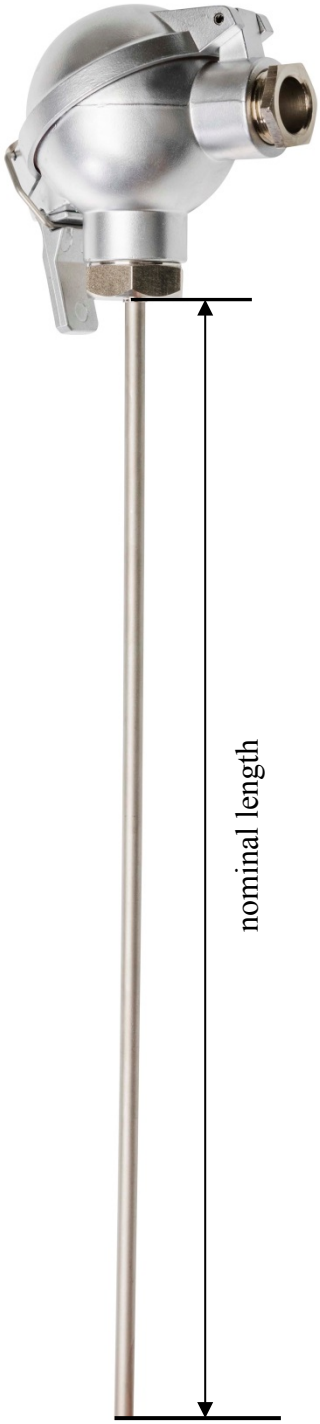
type	height	Ø	thread	order number
R	30 mm	12 mm	G ¼"	**M 0335/R30.¼**
R	30 mm	12 mm	M 12 x 1	**M 0335/R30.12x1**
R	50 mm	12 mm	M 12 x 1	**M 0335/R50.12x1**
S	30 mm	12 mm	M 12 x 1	**M 0335/S30.12x1**
S	30 mm	12 mm	M 14 x 1,5	**M 0335/S30.14x1,5**
S	30 mm	14 mm	G 3/8"	**M 0335/S30.3/8**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

to plug in with head "DB"



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N"= NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni

tube diameter	3,0 mm	4,5 mm	6,0 mm
single thermocouple			
order number	**M 0410**	**M 0420**	**M 0430**
double thermocouple			
order number	**M 0450**	**M 0460**	**M 0470**

Please indicate your desired nominal length when ordering!

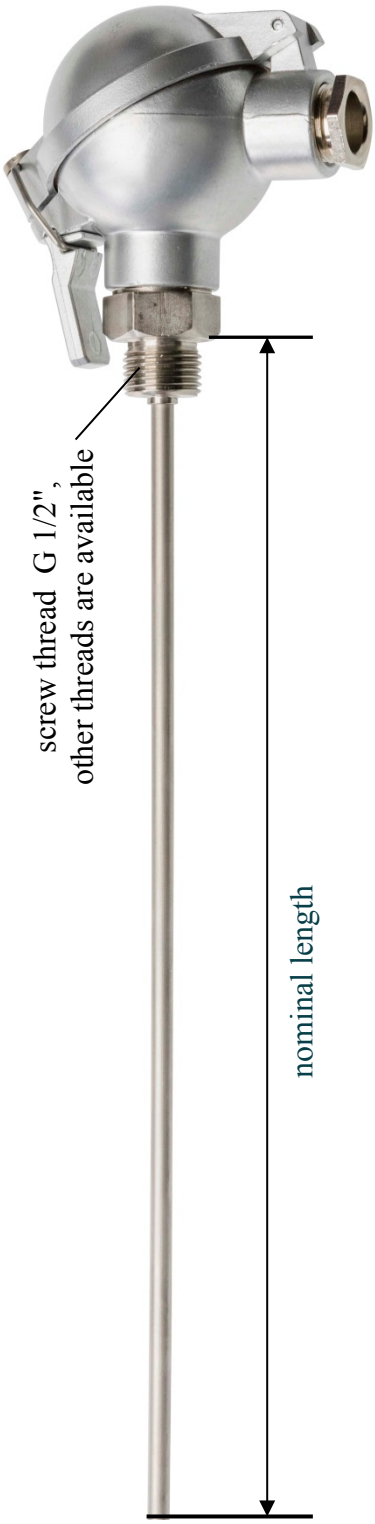
Please enquire other diameters or types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermoelement

with screw thread and head "DB"



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N" = NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni
thread material	: 1.4571, V4A-steel

tube diameter	3,0 mm	4,5 mm	6,0 mm	8,0 mm
single thermocouple				
order number	**M 0350**	**M 0360**	**M 0370**	**M 0371**
double thermocouple				
order number	**M 0380**	**M 0390**	**M 0400**	**M 0401**

Please indicate your desired nominal length when ordering!

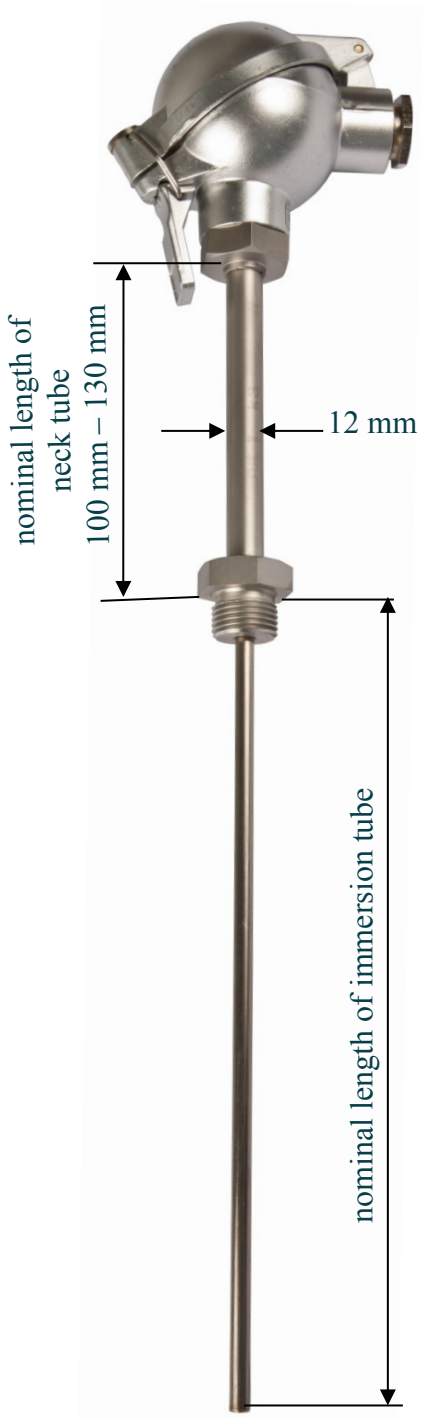
Please enquire other diameters or
types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Mineral insulated thermocouple

with screw thread, neck tube and head "DB"



tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1150° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
	: "N"= NiCroSil.-NiSil
	: "J" = Fe.-Cu.Ni
thread material	: 1.4571, V4A-steel
screw thread	: G 1/2" (SW 27)

Please enquire other screw threads!

	diameter of thermocouple	order number
single thermocouple	3,0 mm 4,5 mm 6,0 mm 8,0 mm	**M 0650** **M 0660** **M 0670** **M 0671**
double thermocouple	3,0 mm 4,5 mm 6,0 mm 8,0 mm	**M 0680** **M 0690** **M 0700** **M 0701**

Please indicate your desired nominal lengths
of neck tube and immersion tube when ordering!

Please enquire other diameters or
types of thermocouples
like "J" = Fe.-Constantan, "N" = NiCrSi-NiSi or "S" = Pt.10Rh.-Pt!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Surface probe with spring

for portable digital thermometers

measuring range	: 20° C to 800° C
thermocouple	: Ni.Cr.-Ni. = "K" to DIN IEC 584
tube material	: 1.4571, V4A, 8 mm ∅
grip	: made of wood
plug	: mini plug
access line	: "K" with flexible steel tube
overall length	: ca. 400 mm

Surface probe with spring

form	length	order number
straight	400 mm	**O 0000/400**
	500 mm	**O 0000/500**
	600 mm	**O 0000/600**

Please ask for other lengths and designs!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Surface probe with chip

for portable digital thermometers

measuring range	: 20° C to 400° C
thermocouple	: Ni.Cr.-Ni. = "K" to DIN IEC 584
tube material	: 1.4571, V4A, 8 mm ∅
grip	: made of wood
plug	: mini plug
access line	: "K" with flexible steel tube
overall length	: ca. 400 mm

Surface probe with chip

form	**order number**
straight	**O 0100**
30° angle	**O 0130**
90° angle	**O 0190**

Please ask for other lengths and designs!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Spares

3.1 Heads for thermocouples I
3.2 Heads for thermocouples II
3.3 Terminal blocks for heads for thermocouples
3.4 Immersion tube (22 mm)
3.5 Immersion tube (15 mm)
3.6 Immersion tube made of cast iron (GGL) with ceramic coat
3.7 Immersion tube made of SiC with incorporated steel tube
3.8 SYALON tubes
3.9 Connecting systems for fixed SYALON tubes
3.10 Connecting systems for not fixed SYALON tubes
3.11 Holding tubes for angle thermocouples
3.12 90° angle for angle thermocouples
3.13 Stop flange for protective tubes
3.14 Gland
3.15 Plug connections
3.16 Protective tube for furnace chamber thermocouples
3.17 Ceramic protective tubes – one side closed
3.18 Insulating tube for thermocouples with 4 holes
3.19 Ceramic tube with flange for electrical connections
3.20 Ceramic holding tubes for heating resistors

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Heads for thermocouples I

"DBA" made of aluminium
(head "DBA" / terminal block "A" or "B") **E 0003**
bore diameter: 22 mm or
internal thread "1/2" or "3/4"

head with terminal block for 1 thermocouple **E 0003/1**
head with terminal block for 2 thermocouples **E 0003/2**
head with terminal block for 3 thermocouples **E 0003/3**

"DB" made of aluminium **E 0005**
bore diameter:15 mm and G 1/2"
for terminal block "B"

head with terminal block for 1 thermocouple **E 0005/1**
head with terminal block for 2 thermocouples **E 0005/2**
head with terminal block for 3 thermocouples **E 0005/3**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Heads for thermocouples II

"MA" made of aluminium **E 0006**
bore diameter : M 10 x 1
terminal block "MA"

head with terminal block for 1 thermocouple **E 0006/1**
head with terminal block for 2 thermocouples **E 0006/2**

"DABH" made of aluminium **E 0007**
bore diameter : 15 mm, 22 mm, G ½", or M 24 x 1,5
for terminal block "B"

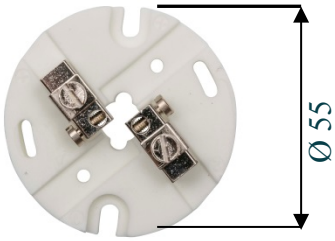
suitable for use with transducers

"BINOX" made of VA-steel **E 0009**
food admission
screw cap with Viton-seal
bore diameter : G 1/2"
for terminal block "B"

R.HÖRNEMANN

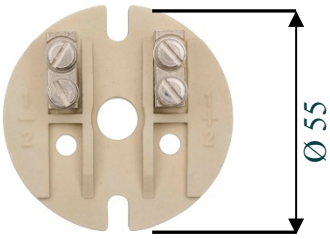
IMMER DIE RICHTIGE TEMPERATUR

Terminal blocks



terminal block "A"

for 1 thermocouple	**E 0010/1**
for 2 thermocouples	**E 0010/2**

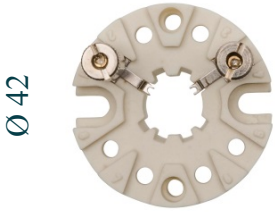


terminal block "A" for precious metal

for 1 thermocouple	**E 0014/1**
for 2 thermocouples	**E 0014/2**

terminal block "B" for screwing

for 1 thermocouple	**E 0020/1**
for 2 thermocouples	**E 0020/2**



terminal block "B" for soldering

for 1 thermocouple	**E 0024/1**
for 2 thermocouples	**E 0024/2**

terminal block "MA" for soldering

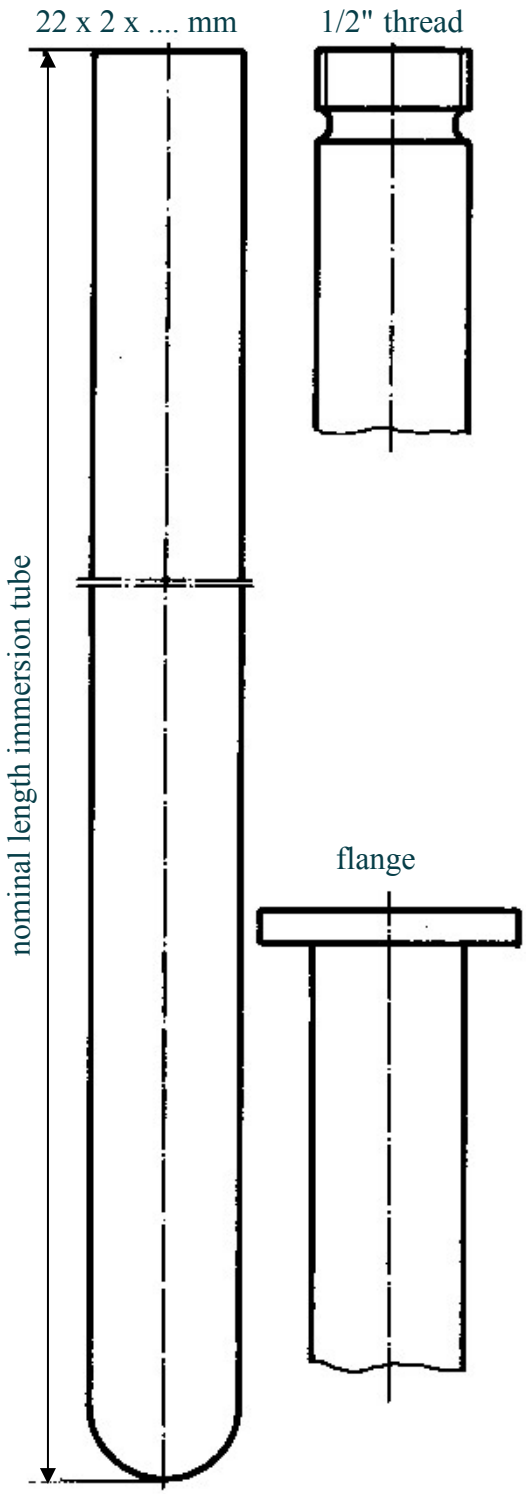
for 1 thermocouple	**E 0034/1**
for 2 thermocouples	**E 0034/2**

terminal block "MA" for screwing

for 1 thermocouple	**E 0030/1**
for 2 thermocouples	**E 0030/2**

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Immersion tube (22 mm) made of steel



tube material *	without thread + 20 mm	with ½" thread + thread	with flange + 30 mm
1.4762	**E 0050/ …**	**E 0060/ …**	**E 0070/ …**
1.4841	**E 0051/ …**	**E 0061/ …**	**E 0071/ …**
1.4749	**E 0052/ …**	**E 0062/ …**	**E 0072/ …**
1.4828	**E 0053/ …**	**E 0063/ …**	**E 0073/ …**
2.4816	**E 0054/ …**	**E 0064/ …**	**E 0074/ …**
pure iron	**E 0055/ …**	**E 0065/ …**	**E 0075/ …**
1.4541 stainless steel	**E 0056/ …**	**E 0066/ …**	**E 0076/ …**
1.4571 stainless steel	**E 0057/ …**	**E 0067/ …**	**E 0077 / …**
xxx	**E 0058/ …**	**E 0068/ …**	**E 0078/ …**

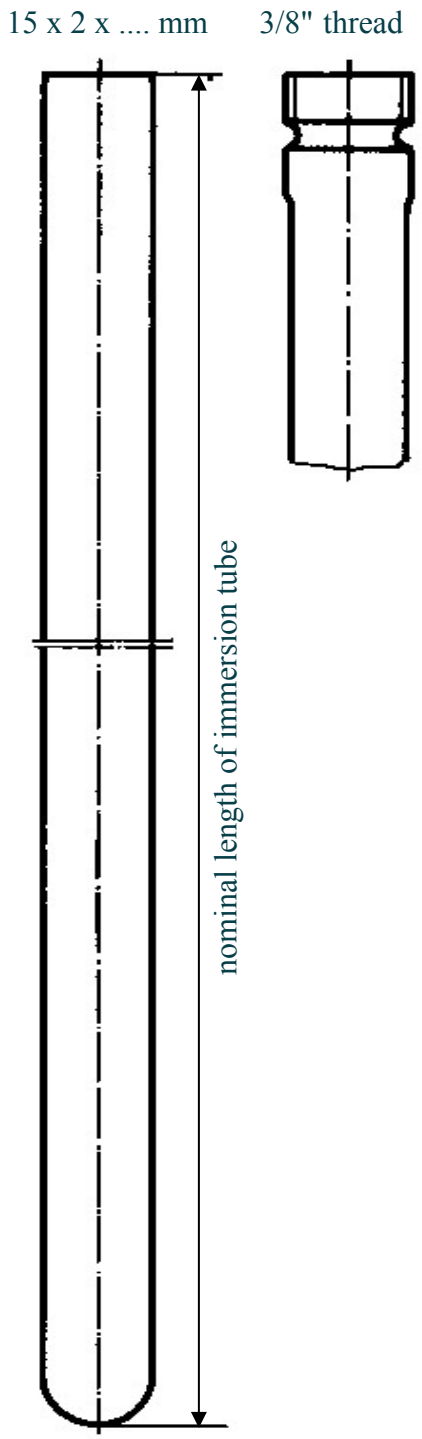
..... please fill in your desired length when ordering!
xxx please order the desired material!

* material description

1.4762	X 10 CrAl 24, to 1150°C scale resistant also in sulphurous atmosphere
1.4841	X 15 CrNiSi 25 20, to 1150°C scale resistant also in sulphurous atmosphere
1.4749	X 18 Cr N 28, to 1050°C scale resistant
1.4828	X 15 CrNiSi 20 12, to 1050°C scale resistant also in sulphurous atmosphere
2.4816	NiCr 15 Fe, to 1150°C scale resistant
1.4541 stainless steel	X 6 CrNTi 18 –10
1.4571 stainless steel	X 6 CrNiMoTi 17 – 12 – 2, V4A

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Immersion tube (15 mm) made of steel



tube material *	without thread + 20 mm	with 3/8" thread + thread
1.4762	**E 0110/ …**	**E 0120/ …**
1.4841	**E 0111/ …**	**E 0121/ …**
1.4749	**E 0112/ …**	**E 0122/ …**
1.4828	**E 0113/ …**	**E 0123/ …**
2.4816	**E 0114/ …**	**E 0124/ …**
pure iron	**E 0115/ …**	**E 0125/ …**
1.4541 stainless steel	**E 0116/ …**	**E 0126/ …**
1.4571 stainless steel	**E 0117/ …**	**E 0127/ …**
xxx	**E 0118/ …**	**E 0128/ …**

..... please fill in your desired length when ordering!
xxx please order the desired material!

* material description

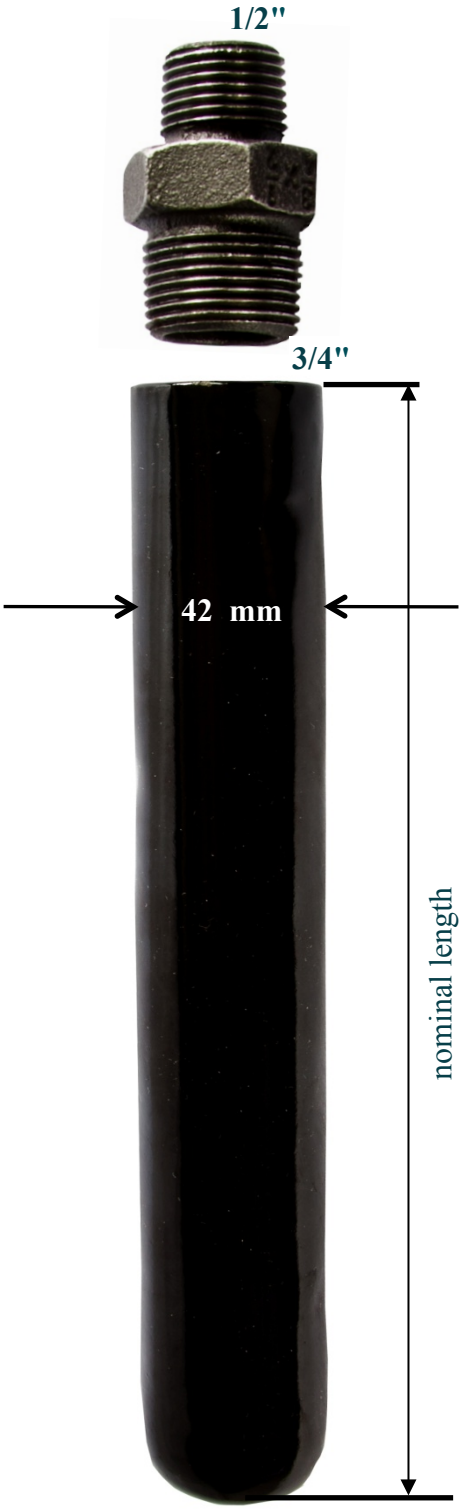
1.4762	X 10 CrAl 24, to 1150°C scale resistant also in sulphurous atmosphere
1.4841	X 15 CrNiSi 25 20, to 1150°C scale resistant also in sulphurous atmosphere
1.4749	X 18 Cr N 28, to 1050°C scale resistant
1.4828	X 15 CrNiSi 20 12, to 1050°C scale resistant also in sulphurous atmosphere
2.4816	NiCr 15 Fe, to 1150°C scale resistant
1.4541	X 6 CrNTi 18 –10
1.4571	X 6 CrNiMoTi 17 – 12 – 2, V4A

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Immersion tube

made of cast iron (GGL) with ceramic coat



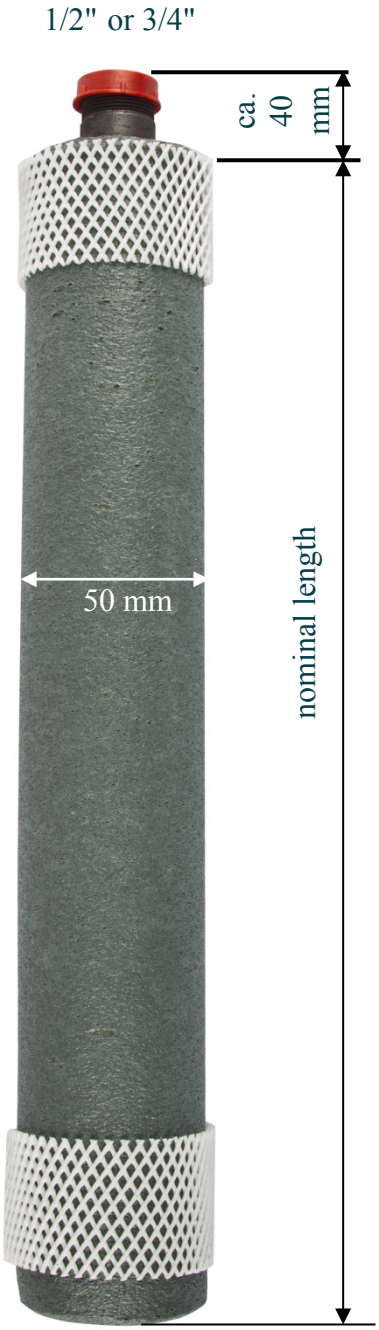
	nominal length	order number
protective tube with ¾" inside thread	305 mm	**E 0150/305**
	460 mm	**E 0150/460**
	610 mm	**E 0150/610**
	760 mm	**E 0150/760**
	915 mm	**E 0150/915**
	1065 mm	**E 0150/1065**
	1220 mm	**E 0150/1220**
	1370 mm	**E 0150/1370**
	1525 mm	**E 0150/1525**
	1830 mm	**E 0150/1830**
protective tube with adapter from ¾" to ½" outside thread	305 mm	**E 0160/305**
	460 mm	**E 0160/460**
	610 mm	**E 0160/610**
	760 mm	**E 0160/760**
	915 mm	**E 0160/915**
	1065 mm	**E 0160/1065**
	1220 mm	**E 0160/1220**
	1370 mm	**E 0160/1370**
	1525 mm	**E 0160/ 1525**
	1830 mm	**E 0160/1830**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Immersion tube

made of SiC with incorporated steel tube



	nominal length	order number
protective tube with ½" thread	255 mm	**E 0170/255**
	305 mm	**E 0170/305**
	350 mm	**E 0170/350**
	410 mm	**E 0170/410**
	460 mm	**E 0170/460**
	510 mm	**E 0170/510**
	560 mm	**E 0170/560**
	610 mm	**E 0170/610**
	710 mm	**E 0170/710**
	760 mm	**E 0170/760**
	910 mm	**E 0170/910**
	1065 mm	**E 0170/1065**
	1215 mm	**E 0170/1215**
	1370 mm	**E 0170/1370**
	1500 mm	**E 0170/1500**
protective tube with ¾" thread	255 mm	**E 0180/255**
	305 mm	**E 0180/305**
	350 mm	**E 0180/350**
	410 mm	**E 0180/410**
	460 mm	**E 0180/460**
	510 mm	**E 0180/510**
	560 mm	**E 0180/560**
	610 mm	**E 0180/610**
	710 mm	**E 0180/710**
	760 mm	**E 0180/760**
	910 mm	**E 0180/910**
	1065 mm	**E 0180/1065**
	1215 mm	**E 0180/1215**
	1370 mm	**E 0180/1370**
	1500 mm	**E 0180/1500**

In case of 3/8" thread: adapter reducing 1/2" inside to 3/8" outside thread order number: E0170/1999

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

SYALON tubes

SYALON is a very advanced and high-performance ceramic that is sintered from silicon.
SYALON is designed for applications requiring a combination of strength, wear, mechanical and thermal shock resistance.
As SYALON is chemically inert, it does not react with molten non ferrous metals or reactive gases. This and the extremely high fracture toughness up to 1250°C result in the following attributes:

1. Virtually unlimited service life in aluminium, many months in copper and copper alloys.

2. SYALON is not wetting.

3. SYALON cannot contaminate the melt.

4. SYALON has an excellent thermal conductivity.

5. SYALON is the strongest ceramic at high temperatures. SYALON is gastight.

6. RH gives a one year guarantee against manufacturing faults and chemical corrosion in aluminium.

tube diameter	order number
16/9	**E 0218/….**
22/12	**E 0219/….**
28/16	**E 0220/….**

/…. please fill in your desired size!
The lengths from 200 mm to 1500 mm are available.
Please ask for other diameters!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Connecting systems for fixed SYALON tubes

The fixed connection

The SYALON tube is inserted into a steel tube (approx. 100 mm). The steel tube is undetachable connected with the SYALON tube by ceramic gluten.

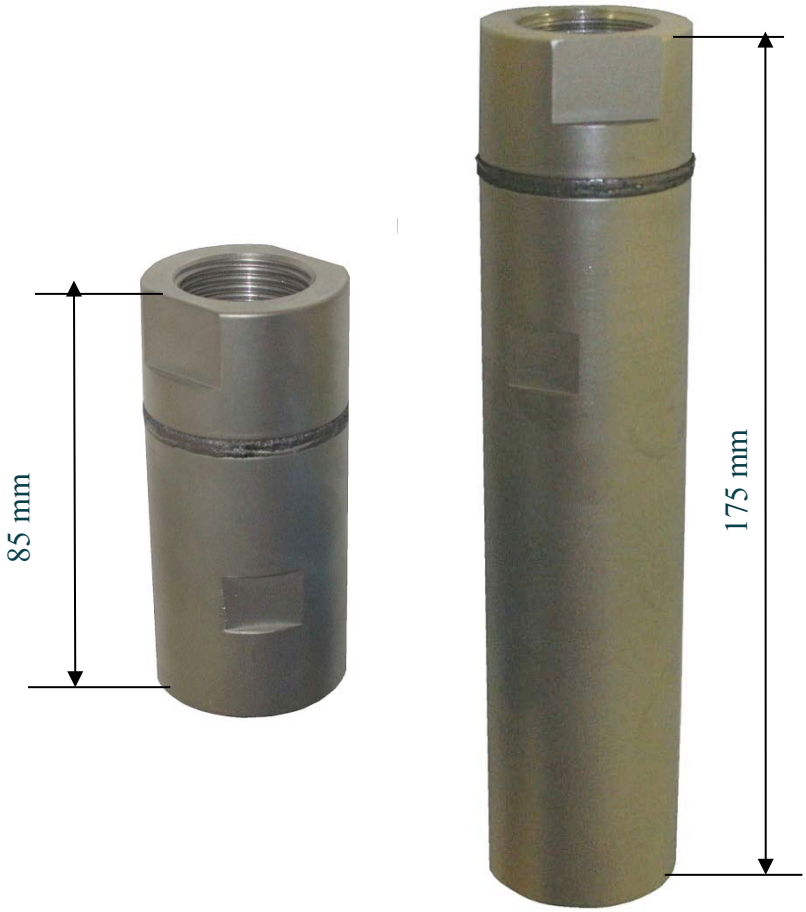
The connection is a 1/2" screw thread (3/4" if desired).

Diameter	Thread	Order number
28/16	1/2"	**E 0240.fest.1/2.100**
28/16	3/4"	**E 0240.fest.3/4.100**
22/12	**½"**	**E 0219.fest.1/2.80**
22/12	**¾"**	**E 0219.fest.3/4.100**
16/9	**½"**	**E 0218.fest.1/2.80**

Please ask for other applications!

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Connection systems for SYALON tubes



Detachable connection

The screw adapter is a mobile clamp connection for the SYALON tube.

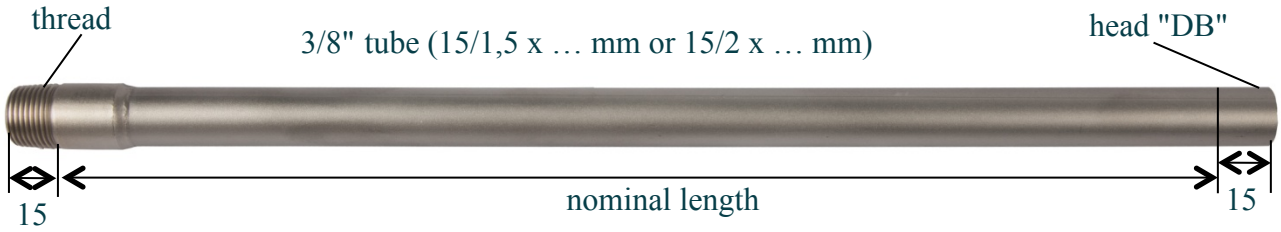
Therefore it can be built in and be removed.

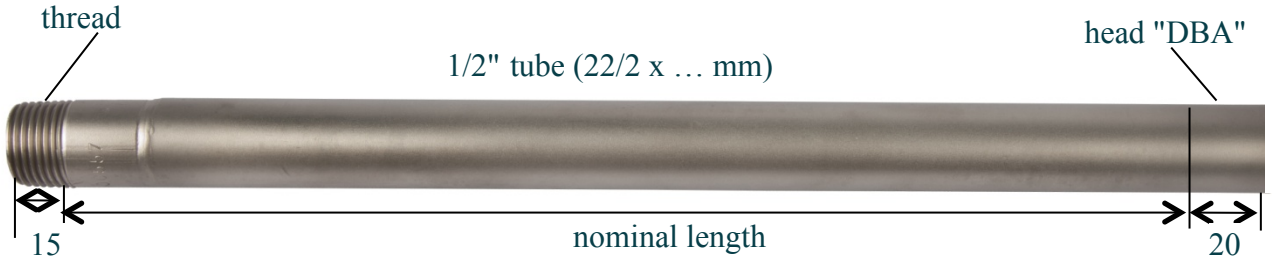
The screw head has an 3/4" inside thread for 28 mm and 22 mm and an 1/2" inside thread for 16 mm.

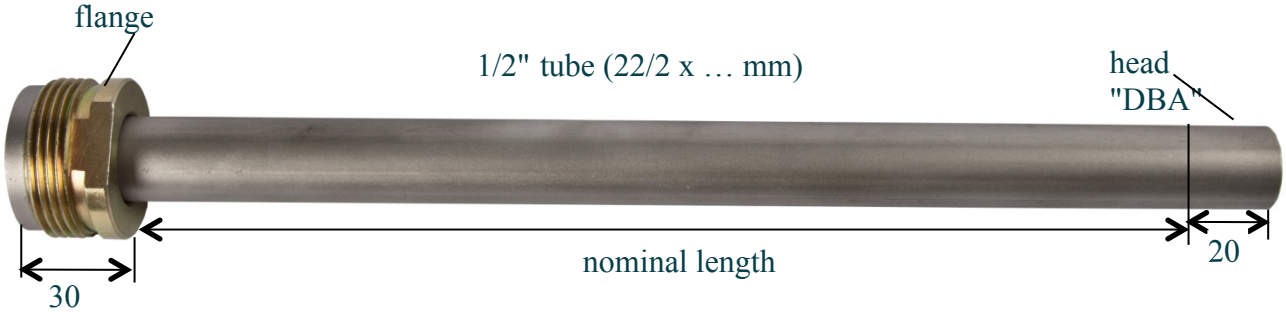
Diameter	order number	thread
for 28 mm	E 0240.kurz E 0240.lang	3/4"
for 22 mm	E 0219.kurz	3/4"
for 16 mm	E 0218.kurz	1/2"

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Holding tubes for angle thermocouples





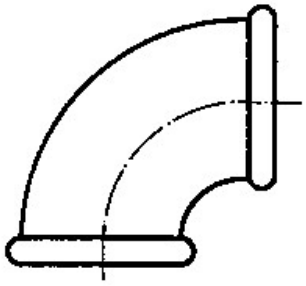


order number	Technical description
E 0300	3/8" thread with 3/8" tube made of V2A steel, 1.4541
E 0310	3/8" thread with 3/8" tube made of 1.4828 heat resistant steel, scale resistant up to 1050°C
E 0320	1/2" thread with 1/2" tube made of V2A steel, 1.4541
E 0330	1/2" thread with 1/2" tube made of 1.4828 heat resistant steel, scale resistant up to 1050°C
E 0340	flange with 1/2" tube made of V2A steel, 1.4541
E 0350	flange with 1/2" tube made of 1.4828 heat resistant steel, scale resistant up to 1050°C
E 0405	suitable threadnipple 1¼" for 22 mm tube

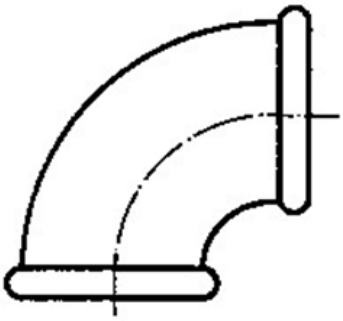
R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

90° angle

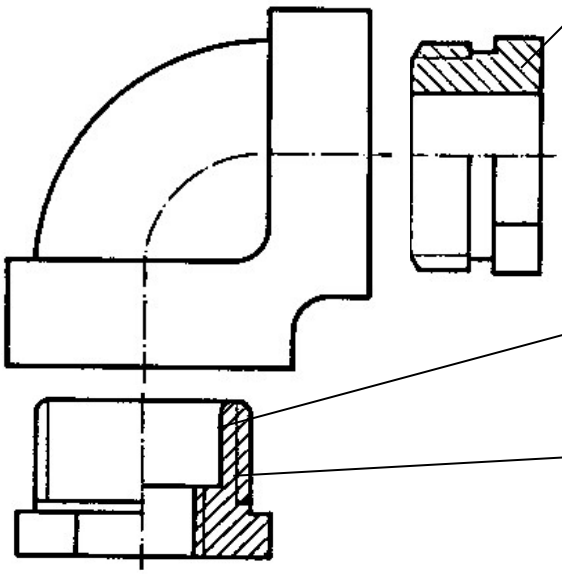
for angle thermocouples



	order number
3/8" inside thread on both sides made of VA	**E 0401**

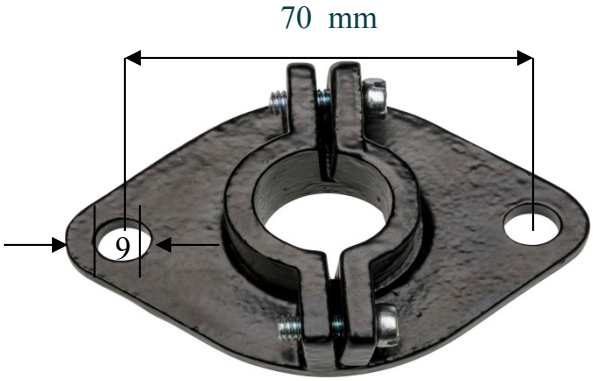


1/2" inside thread on both sides made of VA	**E 0403**



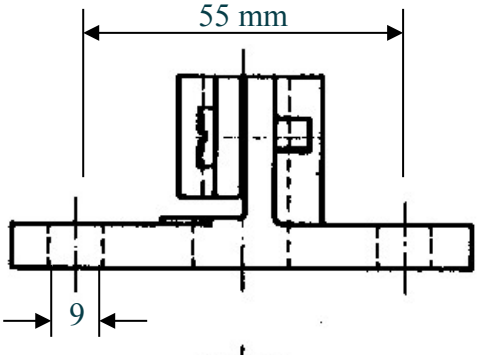
thread nipple 1¼" for tube with 22 mm diameter	**E 0405**
angle element 1¼" inside thread on both sides made of white malleable cast iron	**E 0406**
nipple thread reducing 1¼" to 1/2" made of malleable cast iron	**E 0407**
nipple thread reducing 1¼" to 3/4" made of malleable cast iron	**E 0408**

Stop flange for protective tubes



Stop flange for protective tubes

	order number
22 mm	**E 0420**
32 mm	**E 0422**
34 mm	**E 0422/34**



Stop flange for protective tubes

15 mm	**E 0421**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Gland

for pressure-tight installation of straight thermocouples

tube diameter	screw thread	order number
22 mm	1"	**E 0430**
15 mm	1"	**E 0431**
15mm	½"	**E 0431.1/2**

for pressure-tight installation of mineral insulated thermocouples

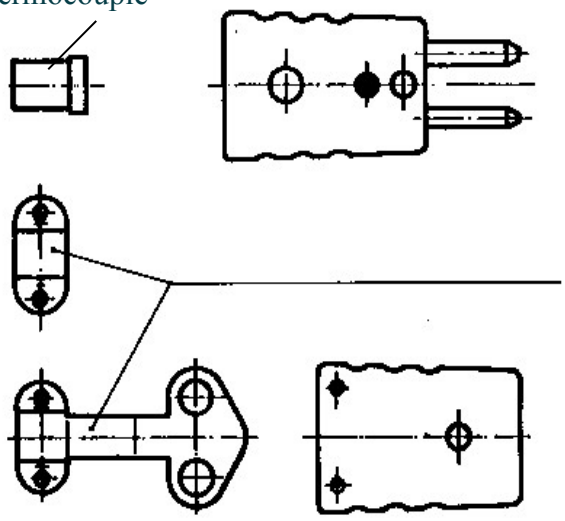
tube diameter	screw thread	order number
1,5 mm	M 8 x 1	**E 0450**
3,0 mm	M 8 x 1	**E 0451**
3,0 mm	G 1/4"	**E 0452**
4,5 mm	G 1/4"	**E 0453**
6,0 mm	G 1/4"	**E 0454**

R.HÖRNEMANN

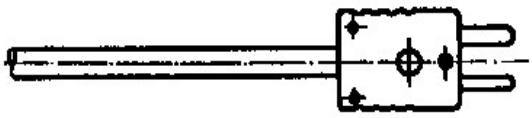
IMMER DIE RICHTIGE TEMPERATUR

Plug connections

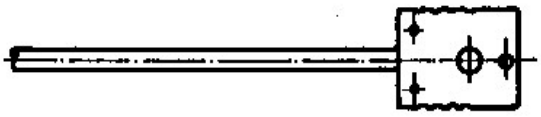
soldering bush for mineral insulated thermocouple



standard plug		**E 0469**
standard plug double		**E 0469.D**
soldering bush for mineral insulated thermocouple	Ø 3,0 mm	**E 0470**
	Ø 4,5 mm	**E 0471**
	Ø 6,0 mm	**E 0472**
strain relief for standard plug		**E 0469.ZUG**
standard coupler		**E 0474**
standard coupler double		**E 0474.D**



mini-plug		**E 0481**
mini-plug double		**E0481.D**
soldering bush for mineral insulated thermocouple	Ø 1,0 mm	**E 0481.1**
	Ø 1,5 mm	**E 0481.15**
	Ø 3,0 mm	**E 0481.3**



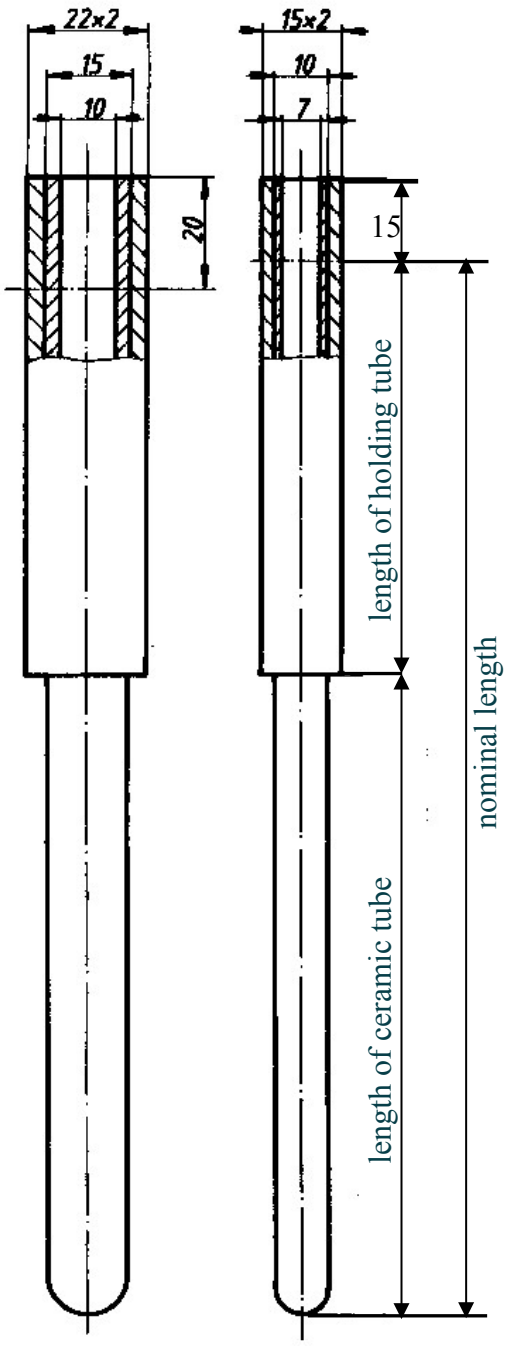
mini coupler		**E 0485**
mini coupler double		**E 0485.D**
strain relief for mini plug		**E 0481.ZUG**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Protective tube for furnace chamber thermocouple

holding tube made of V2A-steel with pasted ceramic tube



nominal length	length of holding tube	length of free ceramic	**order number** for holding tube diameter 15 x 2	22 x 2
250 mm	150 mm	100 mm	**E 0500**	**E 0510**
300 mm	200 mm	100 mm	**E 0501**	**E 0511**
350 mm	200 mm	150 mm	**E 0502**	**E 0512**
400 mm	250 mm	150 mm	**E 0503**	**E 0513**
450 mm	300 mm	150 mm	**E 0504**	**E 0514**
500 mm	350 mm	150 mm	**E 0505**	**E 0515**
550 mm	400 mm	150 mm	**E 0506**	**E 0516**
600 mm	450 mm	150 mm	**E 0507**	**E 0517**
700 mm	550 mm	150 mm	**E 0508**	**E0518**
.....	.....	.....	**E 0509**	**E 0519**

..... /..... /..... ceramic ……..

Please fill in your desired sizes and ceramic type!

Ceramic type 610 for 1400°C

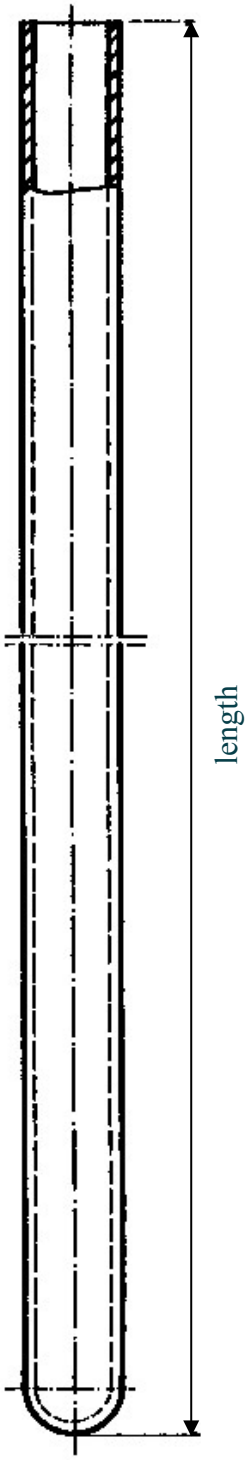
Ceramic type 710 for 1800°C

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Ceramic protective tubes

one side closed



material type 610 Pythagoras (1400°C)

length mm	order number for tube diameter 10/7	15/11	24/19
270	**R 0010/270**	**R 0020/270**	**R 0030/270**
375	**R 0010/375**	**R 0020/375**	**R 0030/375**
530	**R 0010/530**	**R 0020/530**	**R 0030/530**
740	**R 0010/740**	**R 0020/740**	**R 0030/740**
1030	**R 0010/1030**	**R 0020/1030**	**R 0030/1030**
1230	**R 0010/1230**	**R 0020/1230**	**R 0030/1230**
1430	**R 0010/1430**	**R 0020/1430**	**R 0030/1430**
.....	**R 0010/ .....**	**R 0020/ .....**	**R 0030/ .....**

..... please fill in your desired length!

material type 710 Alsint 99,7 (1800°C)

length mm	order number for tube diameter 10/7	15/11	24/19
270	**R 0040/270**	**R 0050/270**	**R 0060/270**
375	**R 0040/375**	**R 0050/375**	**R 0060/375**
530	**R 0040/530**	**R 0050/530**	**R 0060/530**
740	**R 0040/740**	**R 0050/740**	**R 0060/740**
1030	**R 0040/1030**	**R 0050/1030**	**R 0060/1030**
1230	**R 0040/1230**	**R 0050/1230**	**R 0060/1230**
1430	**R 0040/1430**	**R 0050/1430**	**R 0060/1430**
.....	**R 0040/ .....**	**R 0050/ .....**	**R 0060/ .....**

..... please fill in your desired length!

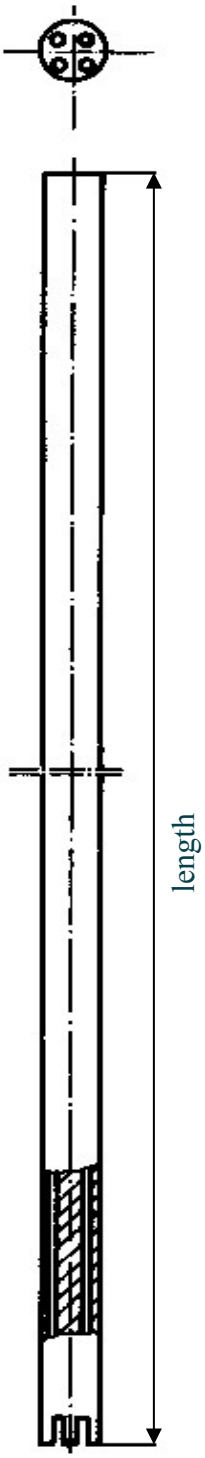
Please ask for other designs!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Insulating tube for thermocouples

with four holes



material type 610 Pythagoras (1400°C)

length	order number for diameter	
mm	5,5 / 1,2	8,5 / 1,5
275	**R 0120/275**	**R 0130/275**
380	**R 0120/380**	**R 0130/380**
560	**R 0120/560**	**R 0130/560**
770	**R 0120/770**	**R 0130/770**
1060	**R 0120/1060**	**R 0130/1060**
1260	**R 0120/1260**	**R 0130/1260**
1460	**R 0120/1460**	**R 0130/1460**
.....	**R 0120/ .....**	**R 0130/ .....**

..... please fill in your desired length!

material type 710 Alsint 99,7 (1800°C)

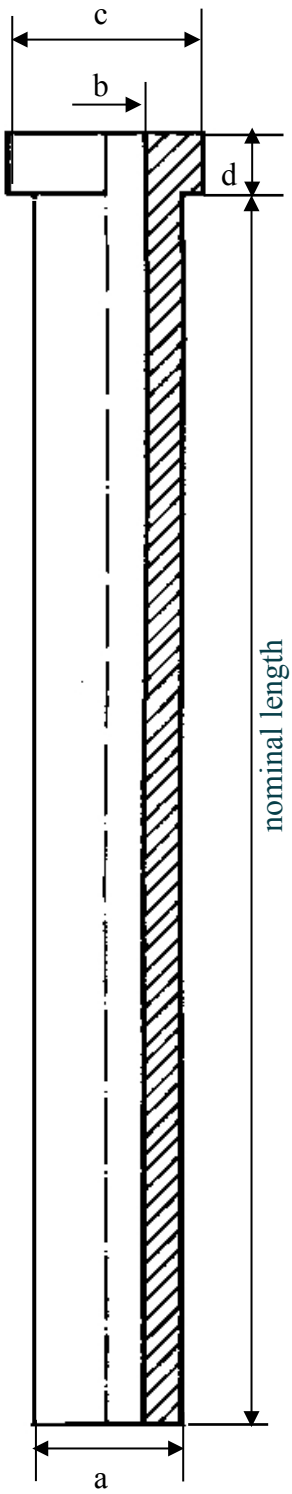
length	order number for diameter	
mm	5,5 / 1,2	8,5 / 1,5
275	**R 0170/275**	**R 0180/275**
380	**R 0170/380**	**R 0180/380**
560	**R 0170/560**	**R 0180/560**
770	**R 0170/770**	**R 0180/770**
1060	**R 0170/1060**	**R 0180/1060**
1260	**R 0170/1260**	**R 0180/1260**
1460	**R 0170/1460**	**R 0180/1460**
.....	**R 0170/ .....**	**R 0180/ .....**

..... please fill in your desired length!

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Ceramic tube

with flange for electrical connections



a = outside diameter	: 18 mm	23 mm
b =inside diameter	: 11,5 mm	12,5 mm
c = flange diameter	: 24 mm	30 mm
d = flange thickness	: 15 mm	10 mm

material : Sillimantin KS porous

temperature limit :1450°C

nominal length	tube diameter	
	18/11,5	23/12,5
125 mm	**R 0813**	**R 0803**
170 mm	**R 0812**	**R 0802**
255 mm	**R 0811**	**R 0801**
320 mm	**R 0810**	**R 0800**

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Ceramic holding tubes for heating resistors

material : Sillimantin KS or Sillimantin 60, porous

temperature limit : 1600° C

tube diameter:	10/6	15/10	20/11,5	25/15	30/23
order number:	**R 1000**	**R 1001**	**R 1002**	**R 1003**	**R 1005**

tube diameter:	35/27	40/32	45/38	50/40	60/50
order number:	**R 1006**	**R 1007**	**R 1008**	**R 1009**	**R 1010**

tube diameter:	70/60	80/70	90/75	100/85	120/100
order number:	**R 1011**	**R 1012**	**R 1013**	**R 1015**	**R 1017**

The tubes are stored in length of 1000 mm and we'll cut them up to the desired size.

Please indicate the order number together with the desired length when ordering.
For example.: R 1003-320 mm or R 1012-800 mm.

Please ask for other lengths and diameters!

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometers

4.1 Resistance thermometer Pt 100
spring loaded with adjustable bayonet cap

4.2 Resistance thermometer Pt 100
to plug in with access line

4.3 Resistance thermometer Pt 100
with screw thread and access line

4.4 Resistance thermometer Pt 100
to plug in with head "B"

4.5 Resistance thermometer Pt 100
with screw thread and head "B"

4.6 Resistance thermometer Pt 100
with screw thread, neck tube and head "B"

4.7 Measuring insert for resistance thermometers Pt 100

4.8 Description of 2- , 3- and 4-conductor circuitry
of Pt 100 - measuring resistors

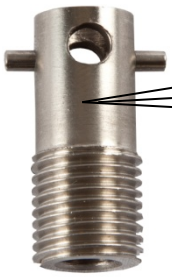
R.HÖRNEMANN

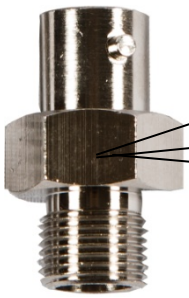
IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100

spring-loaded with adjustable bayonet cap

material of measuring tip	: 1.4571 V4A or Messing
material of spring	: V2A, 1.4301
measuring range	: -50° C to 400° C/600°C
material of bayonet cap	: Ms
tolerance:	class B class A
wiring system	2-conductor circuitry 3-conductor circuitry 4-conductor circuitry
wiring system	single probe double probe
probe diameter	6 mm 8 mm
length of probe	..... mm
length of spring	..... mm
length of access line	..... .mm
access line screened	yes no
working temperature	..... °C





type	height	Ø	thread	order number
R	30 mm	12 mm	G ¼"	**M 0335/R30.¼**
R	30 mm	12 mm	M 12 x 1	**M 0335/R30.12x1**
R	50 mm	12 mm	M 12 x 1	**M 0335/R50.12x1**
S	30 mm	12 mm	M 12 x 1	**M 0335/S30.12x1**
S	30 mm	12 mm	M 14 x 1,5	**M 0335/S30.14x1,5**
S	30 mm	14 mm	G 3/8"	**M 0335/S30.3/8**

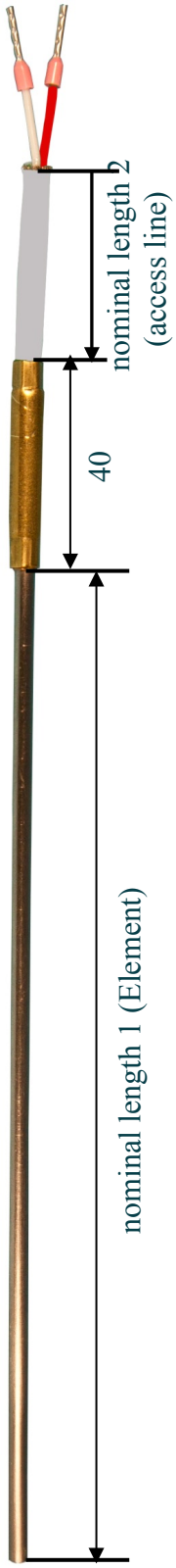
* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100

to plug in with access line



mineral insulated resistance thermometer

resistor implemented in a stainless steel (V4A) tube

tolerance	class B
	class A
wiring system	2-conductor circuitry
	3-conductor circuitry
	4-conductor circuitry
wiring system	single probe
	double probe

probe diameter		..... mm
probe material	: 1.4571	

nominal length of access line	..... mm
nominal length of thermo couple	..... mm

access line screened mm

yes

no

working temperature .....°C

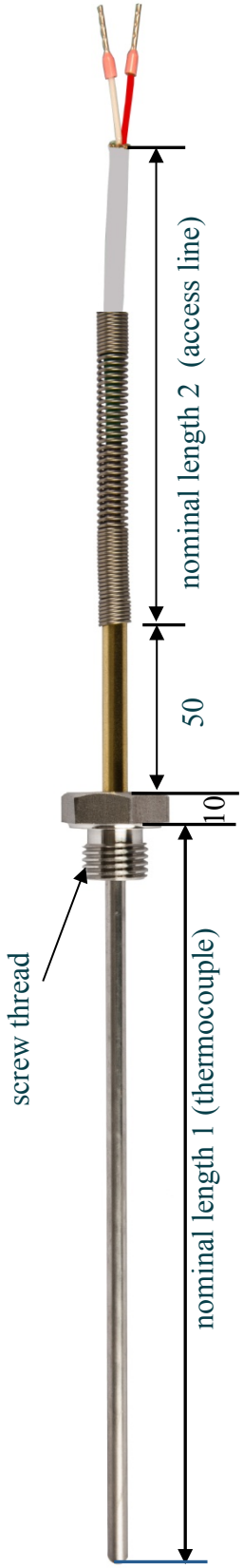
* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100

with screw thread and lead wire



mineral insulated resistance thermometer

resistance thermometer built-in a stainless steel tube

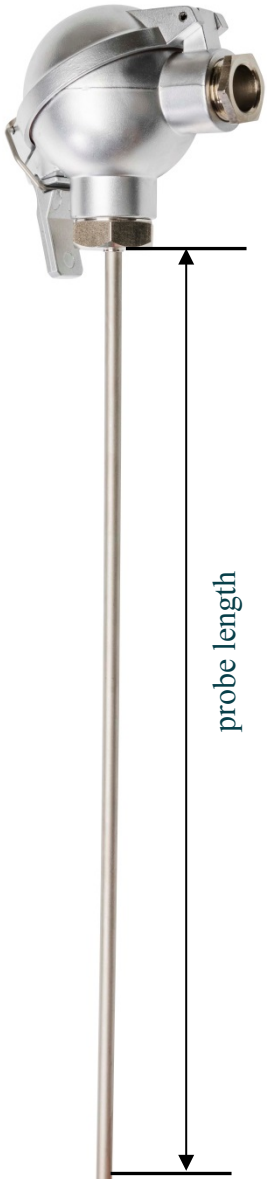
probe material	: V4A, 1.4571
measuring range	: 20° C to 400°C/600°C
thread material	: 1.4571, V4A
tolerance	class B class A
wiring system	2-conductor circuitry 3-conductor circuitry 4-conductor circuitry single probe double probe
probe diameter	.....mm
probe length	.....mm
nominal length of access line	.....mm
screw thread:	1/2" , ¼" or M8x1 please ask for other threads!
access line screened	yes no
working temperature	.....°C

* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100 to plug in with head "DB"



mineral insulated resistance thermometer
resistor built-in a stainless steel tube
head made of aluminium DB

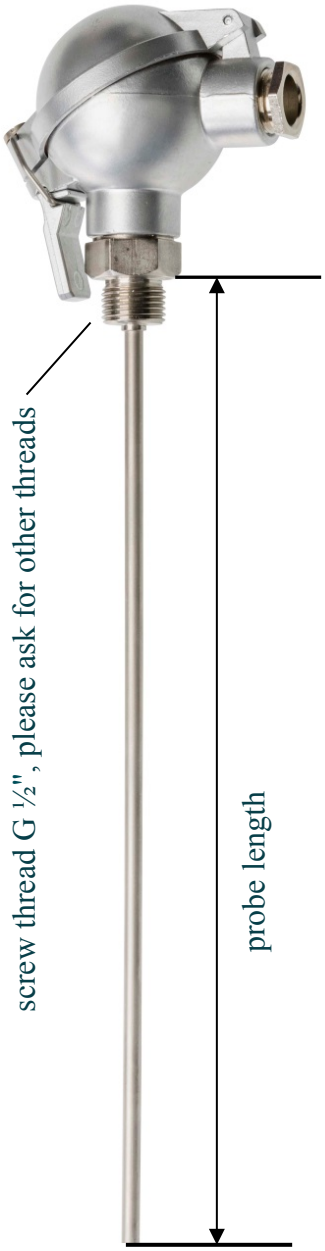
tolerance:		class B class A
wiring system	2-conductor circuitry 3-conductor circuitry 4-conductor circuitry	
	single probe double probe	= 1 x Pt 100 = 2 x Pt 100
execution:	with fixed probe immersion tube as measuring insert immersion tube with changeable measuring insert	
probe diameter		..... mm
probe length		..... mm
working temperature		..... °C
material	up to 600° C :	1.4571
	more than 600°C up to 800°C :	1.4828

* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100 with screw thread and head "DB"



mineral insulated resistance thermometer
resistor built-in a stainless steel tube
head made of aluminium DB

tolerance: class B
class A

wiring system 2-conductor circuitry
3-conductor circuitry
4-conductor circuitry

execution: single probe = 1 x Pt 100
double probe = 2 x Pt 100

with fixed probe
immersion tube as measuring insert
immersion tube with changeable measuring insert

screw thread G 1/2"

please ask for other threads ……..

probe diameter ..... mm
probe length ..... mm
working temperature ..... °C

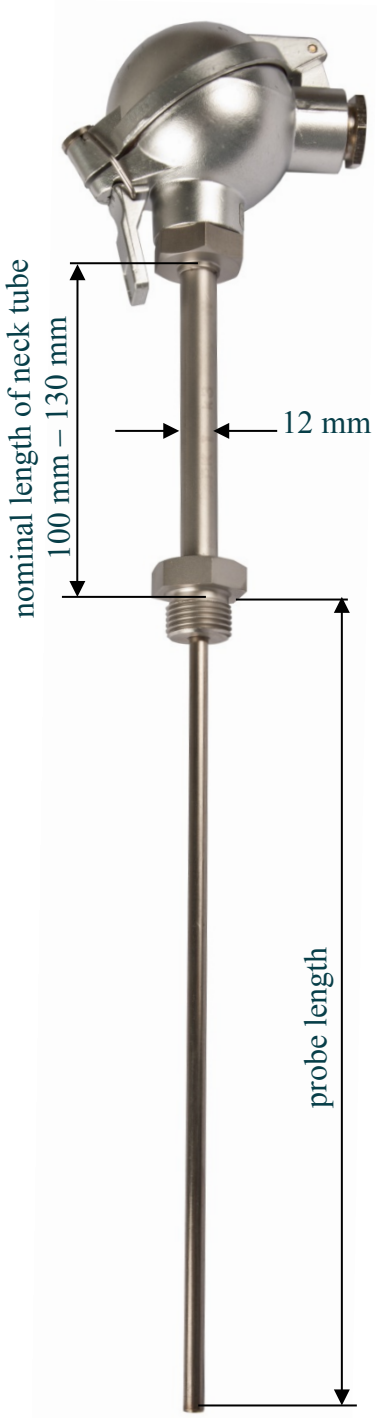
material up to 600° C : 1.4571

* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Resistance thermometer* Pt 100 with screw thread and head "DB"



mineral insulated resistance thermometer

resistor built-in a stainless steel tube

head made of aluminium DB

tolerance class B
class A

wiring system 2-conductor circuitry
3-conductor circuitry
4-conductor circuitry

single probe = 1 x Pt 100
double thermocouple = 2 x Pt 100

construction
neck tube = immersion tube (Pt fixed)
neck tube = immersion tube / Pt-measuring insert
neck tube + immersion tube (Pt fixed)
neck tube + immersion tube / Pt- measuring insert

screw thread **SW 27** G 1/2"

please ask for other threads ……..

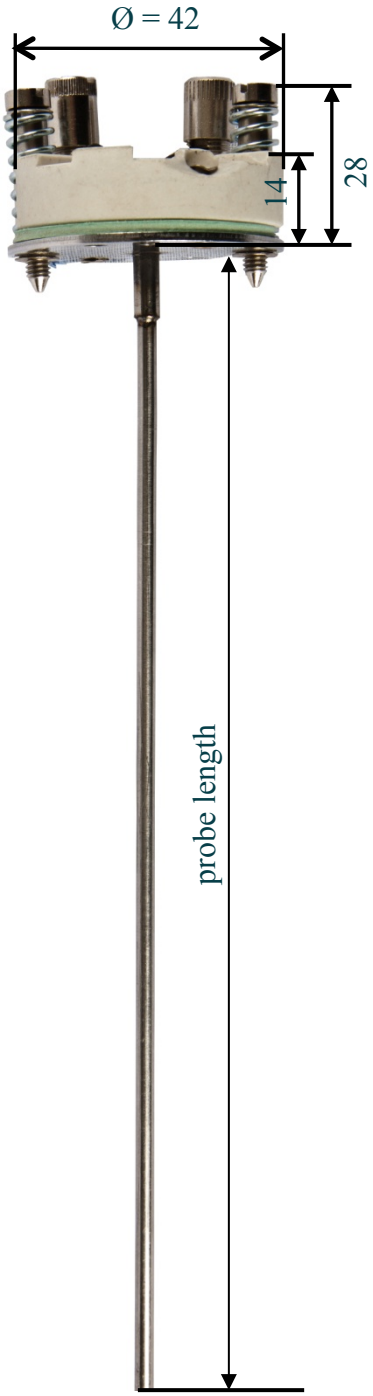
probe diameter: ..... mm
probe length: ..... mm
nominal length of neck tube ..... mm
working temperature: ..... °C
material: 1.4571 or .....

* to DIN 43760/1980 and IEC 751/1983

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Measuring insert for resistance thermometers* Pt 100



mineral insulated resistance thermometer

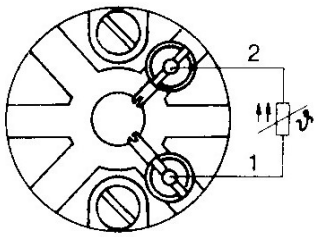
resistor built-in a stainless steel tube

for head		DB
tolerance		class B class A
wiring system	2-conductor circuitry 3-conductor circuitry 4-conductor circuitry	
	single probe = 1 x Pt 100 double probe = 2 x Pt 100	
probe diameter		..... mm
probe material	: 1.4571, V4A-steel	
probe length		..... mm
working temperature		.....°C
material:	to 600° C:	1.4571

* to DIN 43760/1980 and IEC 751/1983

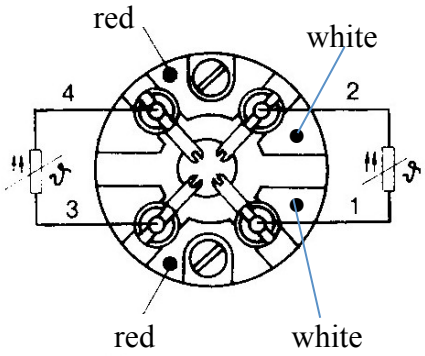
Description of 2-, 3- and 4-conductor circuitry of Pt 100 measuring resistors

Pt 100 Ω
2-conduit circuitry

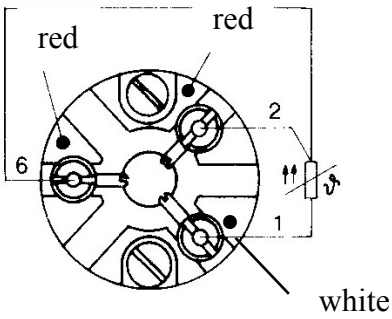


no coloured characterization

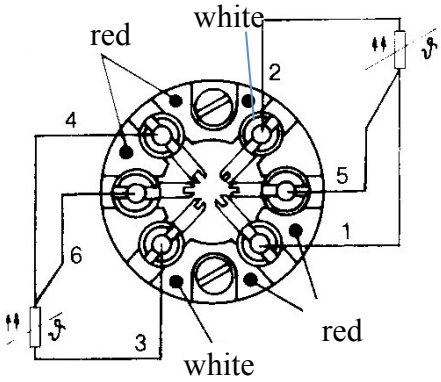
2 x Pt 100 Ω
2-conduit circuitry



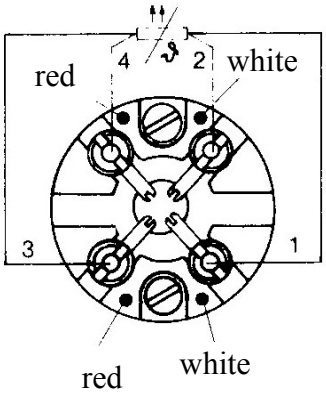
Pt 100 Ω
3-conduit circuitry



2 x Pt 100 Ω
3-conduit circuitry



Pt 100 Ω
4-conduit circuitry



R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Measuring instruments

5.1a Digital thermometer model 305

5.1b Digital thermometer model 307

5.1c Digital thermometer model TM 83 for type K/J/T/E/R/S/N

5.2 Infrared thermometer

5.3 Bimetal dial thermometer fixed by magnets

5.4 Measuring lance for molten heavy metal for digital thermometers

5.5 Measuring lance for Marshall elements with/without digital instrument

5.6 Measuring lance for Syalon tube with digital instrument

5.7 Measuring lance for mineral insulated thermocouple tips with digital instrument

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Digital thermometer model 305

Technical characteristics

probe	: Ni.Cr.-Ni. = type "K" to DIN IEC 584
measuring range	: -50°C to +1300°C
accuracy	: +/- 0,5°C
connection	: mini flat plug
display	: 2" LCD
ambient operating range	: 0° C to 50°C
battery	: 9Volt battery
battery life	: ca. 150 hours
dimensions	: 147 mm x 70 mm x 39 mm
weight	: 210 g

order number **M 0501**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Digital thermometer model 307

Differentiation thermometer with two input connectors

Technical characteristics

probe	: Ni.Cr.-Ni., type "K" to DIN IEC 584
measuring range	: -50°C to +1300°C
accuracy	: ± 0,5°C
connection	: mini flat plug
display	: 2" LCD
ambient operating range	: 0° C to 50°C
battery	: standard 9V battery
battery life	: ca. 150 hours
dimensions	: 147 mm x 70 mm x 39 mm
weight	: 210 g

order number **M 0502**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Digital thermometer model TM 83

for type K/J/T/E/R/S/N

Technical characteristics

measuring range
according to the DIN values
of the specified element types

accuracy
± 0,05%

connection
mini thermocouple connector

display
13 mm LCD

ambient operating range
0° C to 50° C

battery
standard 9V battery

battery life
ca. 100 hours

dimensions
155 mm x 56 mm x 38 mm

weight
170 g

order number M 0501.TM-83

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Infrared thermometer

measuring range
-20° C to 500° C

display
0,5" LCD

ambient operating range
0°C to 50°C

battery
standard 9V battery

battery life
ca. 15 hours

dimensions
ca. 157,5 mm x 115 mm x 36 mm

weight
ca. 180 g

order number **M 0500**

Please ask for higher measuring range

Image differs from original

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Bimetal dial thermometer

fixed by magnets

Areas of application:

temperature measurement of surfaces
e. g. at Fe-molds
The dial is protected by a removable cover.
The bar magnets are not removable.

Technical specification:

measuring system	: bimetal
body	: brass nickel-plated
scale	: according to DIN
viewing glass	: curved glass
fixing	: 2 or 4 bar magnets
accuracy	: class 1 or 2

body Ø	class	measuring range	fixing	order number
63 mm	1	0° C to 400° C	2 magnets	**O 0162.400.2**
80 mm	1	0° C to 400° C	4 magnets	**O 0164.400.4**
80 mm	1	0° C to 600° C	4 magnets	**O 0164.600.4.fest**

thermometer for flat and curved surfaces fixed by flexible magnets

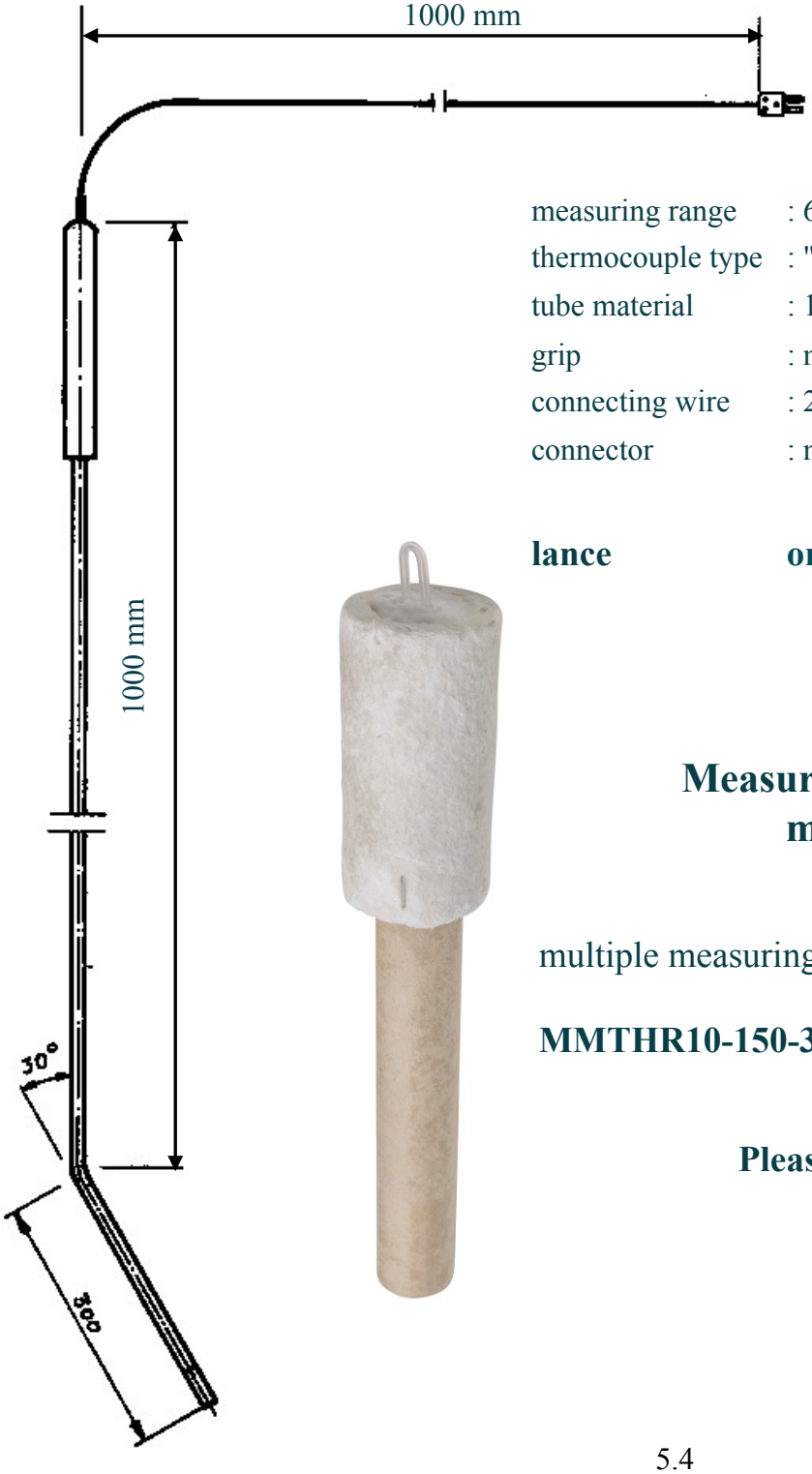
80 mm	2	0° C to 600°C	4 magnets	**O 0164.600.4.beweglich**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Measuring lance for molten heavy metal

for multiple measuring heads to attach



measuring range	: 600° C to 1600°C
thermocouple type	: "S" Pt.10Rh. - Pt. to DIN IEC 584
tube material	: 1.4301 V2A, 15 x 1,5 x ca. 1300 mm
grip	: made of wood
connecting wire	: 2 x 0,22 mm^2, tefl./tefl.
connector	: mini plug type "S"

lance **order number M 0525**

Measuring heads as multiple measuring heads

multiple measuring	protection cap
MMTHR10-150-300	without cap

Please ask for other types

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Measuring lance for Marshall elements

with/without digital instrument

measuring range	: 20° C to 1200°C
thermocouple	: Ni.Cr.-Ni. = "K" to DIN IEC 584
measuring tip	: Marshall insert
grip	: made of wood

Measuring lances

with digital instrument	M 0270.Digi.Marshall
ohne digital instrument	M 0270.Lanze for Marshall

Measuring inserts

measuring tip 200 mm	M 270/501.T8.43
measuring tip 300 mm	M 270.500.T12.43

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Measuring lance with Syalon-tube

with digital instrument

measuring range	: 20° C to 1200°C
thermocouple	: Ni.Cr.-Ni. = "K" to DIN IEC 584
measuring tip	: Syalon
grip	: made of wood

measuring lance	**M 0270.Digi.Syalon**
measuring insert	**M 0041/800.300**
Syalon-tube	**E 0218/300**
adapter	**E 0218.fest.1/2"**

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Measuring lance for mineral insulated thermocouple tips

with digital instrument

tube material	: "Inconel" 2.4816
measuring range	: 20° C to 1200° C
thermocouple	: "K" = Ni.Cr. - Ni. to DIN IEC 584
grip	: made of wood

order number: M 0270.Lanze.Digi.MTE.3-6

Ø	nom. length in mm	order nr.
3,0 mm	500	M 0011/500.HT
3,0 mm	800	M 0011/800.HT
4,5 mm	500	M 0012/500.HT
4,5 mm	800	M 0012/800.HT
6,0 mm	500	M 0013/500.HT
6,0 mm	800	M 0013/800.HT

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

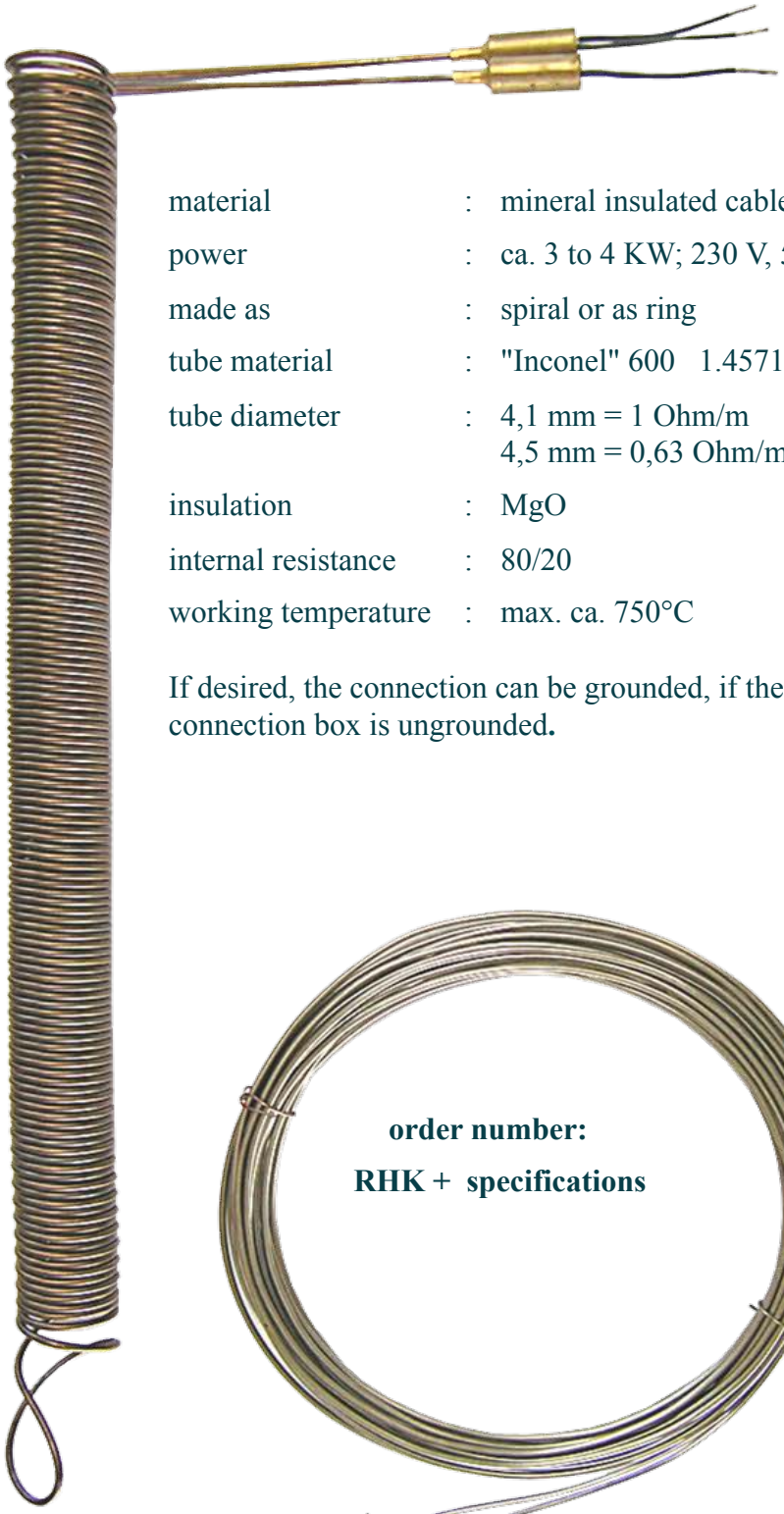
Heating resistors

6.1 tubular heating element

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Tubular heating element



material	:	mineral insulated cable
power	:	ca. 3 to 4 KW; 230 V, 50 Hz
made as	:	spiral or as ring
tube material	:	"Inconel" 600 1.4571
tube diameter	:	4,1 mm = 1 Ohm/m 4,5 mm = 0,63 Ohm/m
insulation	:	MgO
internal resistance	:	80/20
working temperature	:	max. ca. 750°C

If desired, the connection can be grounded, if the connection box is ungrounded.

order number:

RHK + specifications

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Technical characteristics

7.1 Standard material and characteristics of colour

7.2 Bases of the thermo-voltages in mV

7.3 DIN-tolerances for thermocouples and thermal lines

7.4 Basic values from - 250°C to + 850°C

7.5 Permissible deviations of basic values

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Standard material and characteristics of colour

for compensation and thermocouple lines

standard	type			material of the compensation line			characteristics of colour		
							core insulation		sheath
	type	+ pole	- pole	code	+ pole	- pole	+ pole	- pole	
DIN 43 722 IEC 584	T	Cu	CuNi	TX	Cu	CuNi	brown	white	brown
	E	NiCr	CuNi	EX	NiCr	CuNi	violet	white	violet
	J	Fe	CuNi	JX	Fe	CuNi	black	white	black
	K	NiCr	Ni	KX	NiCr	Ni	green	white	green
	K	NiCr	Ni	KC A	Fe	CuNi	green	white	green
	K	NiCr	Ni	KC B	Cu	CuNi	green	white	green
	R/S	Pt13/10Rh	Pt	RC A/SC A	Cu	CuNi	orange	white	orange
	R/S	Pt13/10Rh	Pt	RC B/SC B	Cu	CuNi	orange	white	orange
	N	NiCrosil	Nisil	NC	Cu	CuNi	pink	white	pink
	B	Pt30Rh	Pt6Rh	BC	Cu-Leg.	Cu	gray	white	gray
ANSI	T	Cu	CuNi	TX	Cu	CuNi	blue	red	blue
	E	NiCr	CuNi	EX	NiCr	CuNi	purple	red	purple
	J	Fe	CuNi	JX	Fe	CuNi	white	red	black
	K	NiCr	Ni	KX	NiCr	Ni	yellow	red	yellow
	R/S	Pt13/10Rh	Pt	RX/SX	Cu	CuNi	black	red	green
	B	Pt30Rh	Pt6Rh	BX	Cu-Leg.	Cu	gray	red	gray
NF	T	Cu	CuNi	TX	Cu	CuNi	yellow	blue	blue
	E	NiCr	CuNi	EX	NiCr	CuNi	yellow	orange	orange
	J	Fe	CuNi	JX	Fe	CuNi	yellow	black	black
	K	NiCr	Ni	KX	NiCr	Ni	yellow	violet	violet
	K	NiCr	Ni	VC	Cu	CuNi	yellow	brown	brown
	K	NiCr	Ni	WC	Fe	CuNi	yellow	white	white
	R/S	Pt13/10Rh	Pt	RC/SC	Cu	CuNi	yellow	green	green
	B	Pt30Rh	Pt6Rh	BC	Cu-Leg.	Cu	yellow	gray	gray
DIN 43 710	U	Cu	CuNi	UX	Cu	CuNi	red	brown	brown
	L	Fe	CuNi	LX	Fe	CuNi	red	blue	blue

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Bases of the thermo-voltages in mV

tem-pera-ture	type K	type L	type J	type U	type T	type E	type N	type S	type R	type B
	+NiCr -Ni	+Fe -CuNi	+Fe -CuNi	+ECu -CuNi	+ECu -CuNi	+NiCr -CuNi	+NiCrSi -NiSi	+PtRh10 -Pt	+PtRh13 -Pt	+PtRh30 -PtRh 6
	ANSI DIN IEC 584	DIN 43710	ANSI DIN IEC 584	DIN 43710	ANSI DIN IEC 584	ANSI DIN IEC 584	DIN IEC 584 z.Zt. ENTW	ANSI DIN IEC 584	ANSI DIN IEC 584	ANSI DIN IEC 584
-100	-3,553	-4,750	-4,632	-3,400	-3,378	-5,237	-2,407	-	-	-
0	0	0	0	0	0	0	0	0	0	0
+100	4,095	5,370	5,268	4,250	4,277	6,317	2,774	0,645	0,647	0,033
200	8,137	10,950	10,777	9,200	9,286	13,419	5,912	1,440	1,468	0,178
300	12,207	16,560	16,325	14,900	14,860	21,033	9,340	2,323	2,400	0,431
400	16,395	22,160	21,846	21,000	20,869	28,943	12,972	3,260	3,407	0,786
500	20,640	27,850	27,388	27,410	-	36,999	16,744	4,234	4,471	1,241
600	24,902	33,670	33,096	34,310	-	45,085	20,609	5,237	5,582	1,971
700	29,128	39,720	39,130	-	-	53,110	24,526	6,274	6,741	2,430
800	33,277	46,220	-	-	-	61,022	28,456	7,345	7,949	3,154
900	37,325	53,140	-	-	-	68,783	32,370	8,448	9,203	3,957
1000	41,269	-	-	-	-	76,358	36,248	9,585	10,503	4,833
1100	45,108	-	-	-	-	-	40,076	10,754	11,846	5,777
1200	48,828	-	-	-	-	-	43,836	11,947	13,224	6,783
1250	50,633	-	-	-	-	-	45,682	12,550	13,922	7,308
1300	52,398	-	-	-	-	-	47,502	13,155	14,624	7,845
1400	-	-	-	-	-	-	-	14,368	16,035	8,952
1450	-	-	-	-	-	-	-	14,973	16,741	9,519
1500	-	-	-	-	-	-	-	-	-	10,094
1600	-	-	-	-	-	-	-	-	-	11,257
1700	-	-	-	-	-	-	-	-	-	12,426

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

DIN-tolerances for thermocouples and thermal lines (X)

type	norm	material	class 1 (A)		class 2 (B)	
			measuring range	limiting deviation	measuring range	limiting deviation
T	DIN IEC 584	Cu-CuNi	-40° C to +350° C	0,5° C or 0,4 %	-40° C to +350° C	1,0° C or 0,75 %
U	DIN 43710	Cu-CuNi	------	------	0° C to +600° C	±3° C or ± 0,75 %
J	DIN IEC 584	Fe-CuNi	-40° C to +750° C	1,5° C or 0,4 %	-40° C to +750° C	2,5° C or 0,75 %
L	DIN 43710	Fe-CuNi	------	------	0° C to +900° C	±3° C or ± 0,75 %
K	DIN IEC 584	NiCr-Ni	-40° C to +1000° C	1,5° C or 0,4 %	-40° C to +1200° C	2,5° C or 0,75 %
E	DIN IEC 584	NiCr-CuNi	-40° C to +800° C	1,5° C or 0,4 %	-40° C to +900° C	2,5° C or 0,75 %
N	DIN IEC 584	NiCrSi-NiSi	-40° C to +1000° C	1,5° C or 0,4 %	-40° C to +1200° C	2,5° C or 0,75 %
S	DIN IEC 584	PtRh10-Pt	0° C to +1600° C	1° C or 0,15 %	0° C to +1600° C	1,5° C or 0,3 %
R	DIN IEC 584	PtRh13-Pt	0° C to +1600° C	1° C or 0,15 %	0° C to +1600° C	1,5° C or 0,3 %
B	DIN IEC 584	PtRh30-PtRh6	------	------	600° C to +1700° C	1,5° C or 0,5 %
TX	DIN IEC 584	Cu-CuNi	-25° C to +100° C	±30µV = 0,5° C	-25° C to +100° C	±60µV = 1° C
JX	DIN IEC 584	Fe-CuNi	-25° C to +200° C	±85µV = 1,5° C	-25° C to +200° C	±140µV = 2,5° C
KX	DIN IEC 584	NiCr-Ni	-25° C to +200° C	±60µV = 1,5° C	-25° C to +200° C	±105µV = 2,5° C
EX	DIN IEC 584	NiCr-CuNi	-25° C to +200° C	±120µV = 1,5° C	-25° C to +200° C	±200µV = 2,5° C
UX	DIN 43710	Cu-CuNi	------	------	0° C to +200° C	±170µV = 3° C
LX	DIN 43710	Fe-CuNi	------	------	0° C to +200° C	±140µV = 3° C
NX	DIN IEC 584	NiCrSi-NiSi	0° C to +200° C	±50µV = 1,5° C	0° C to +200° C	±85µV = 2,5° C

R.HÖRNEMANN

IMMER DIE RICHTIGE TEMPERATUR

Basic values from - 250°C to + 850°C for platinum sensor resistors

Nominal resistance R_0 = 100 Ω according to DIN 43760/1980 and IEC 751 (1983); with another R_C result analogous multiples of these tabular values.

resistance in Ω										
°C	**0**	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
- 200	18,49	14,45	10,49	6,99	4,26	2,51	---------	----------	----------	----------
- 100	60,25	56,19	52,11	48,00	43,87	39,71	35,53	31,32	27,08	22,80
0	100,00	96,09	92,16	88,22	84,27	80,31	76,33	72,33	68,33	64,30
0	100,00	103,90	107,79	111,67	115,54	119,40	123,24	127,07	130,89	134,70
+ 100	138,50	142,29	146,06	149,82	153,58	157,31	161,04	164,76	168,46	172,16
+ 200	175,84	179,51	183,17	186,82	190,45	194,07	197,69	201,29	204,88	208,45
+ 300	212,02	215,57	219,12	222,65	226,17	229,67	233,17	236,65	240,13	243,59
+ 400	247,04	250,48	253,90	257,32	260,72	264,11	267,49	270,86	274,22	277,56
+ 500	280,90	284,22	287,53	290,83	294,11	297,39	300,65	303,91	307,15	310,38
+ 600	313,59	316,80	319,99	323,18	326,35	329,51	332,66	335,79	338,92	342,03
+ 700	345,13	348,22	351,30	354,37	357,42	360,47	363,50	366,52	369,53	372,52
+ 800	375,51	378,48	381,45	384,40	387,34	390,26	----------	----------	----------	----------

R.HÖRNEMANN
IMMER DIE RICHTIGE TEMPERATUR

Permissible deviations of basic values for platinum sensor resistors

.

The permissible deviations for platinum sensor resistors are determined by the following equations in accordance with IEC 751, 2:1995-07 (DIN EN 60751:1996-07):

Permissible deviations in °C = ± (0,15 + 0,002 [t]) for class A
Permissible deviations in °C = ± (0,3 + 0,005 [t]) for class B
[t] is the temperature value in °C.

Deviations in °C apply to all nominal resistances;
Deviations in Ω only up to 100 Ω.

For nominal resistance values other than 100 Ω the deviation values in Ω must be multiplied by the factor R_0 x 10^{-2} (R_0 = nominal resistance for 0°C).

More restricted or wider tolerances can be supplied to special order.

measuring temperature in °C	permissible deviations			
	class A		class B	
	Ω	C	Ω	C
- 200	± 0,24	± 0,55	± 0,56	± 1,3
- 100	± 0,14	± 0,35	± 0,32	± 0,8
0	± 0,06	± 0,15	± 0,12	± 0,3
100	± 0,13	± 0,35	± 0,30	± 0,8
200	± 0,20	± 0,55	± 0,48	± 1,3
300	± 0,27	± 0,75	± 0,64	± 1,8
400	± 0,33	± 0,95	± 0,79	± 2,3
500	± 0,38	± 1,15	± 0,93	± 2,8
600	± 0,43	± 1,35	± 1,06	± 3,3
650	± 0,46	± 1,45	± 1,13	± 3,6
700	----------	----------	± 1,17	± 3,8
800	----------	----------	± 1,28	± 4,3
850	----------	----------	± 1,34	± 4,6