



# GÜNTHER<sup>GmbH</sup>

Temperaturmesstechnik



**Product category 52-WOS  
Mineral Insulated Resistance  
Thermometers without Protection Tube**



#### Application Examples for Mineral Insulated Resistance Thermometers without Protection Tube:

-  Plant and Machine Construction
-  Automobile Industry
-  Laboratories
-  Plastic Industry

#### Availability:

We offer every current version and diameter of mineral insulated resistance thermometer with mounted plug-and-socket connectors, connector heads, compensation lines with or without specialised contacts, as well as accessories and every type of mounting.

#### 52-WOS

#### Mineral Insulated Resistance Thermometers without Protection Tube

Sensors of this type are used for general temperature measurement up to 600°C, on rare occasions up to 800°C. They are suited for surface temperature measurement as well as measurements of liquids and gases.

Depending on the connection type (2-wire, 3-wire or 4-wire – in turn depending on the required measurement precision and connector length), resistance thermometers consist of 2, 4 or 6 copper feed lines (inner conductors), surrounded by a thin metallic protective mantle, usually made of high-grade steel. The inner conductors are firmly press-fitted and insulated in ceramic powder. The precision resistor inside the sensor tip is connected through the inner conductors.

As a result of their structure, mineral insulated resistance thermometers have the following advantages:

- Small physical dimensions with maximum flexibility for temperature measurement at sites with difficult accessibility (diameter 1,5 – 6,0 mm).
- Short response time for exact measurements of temperature variations
- Optimal protection for the sensor system against corrosion, oxidation, physical damage and chemical contamination as a result of the enclosed structure
- The enclosed structure also facilitates application of these sensors without additional protective fitting

**Our resistance thermometers are also available in explosion protected ATEX models.**

**Further technical information for this product line is available on our website:**

**<http://www.guenther.eu/en/products/resistance-thermometers/52-wos/sheath-resistance-thermometer-without-protection-tube>**





**1 Connection Components (Plug/Socket)**

LEMO Size 0 - 3
Standard
Miniature
High-Temp.-Standard
High-Temp.-Miniature
Ceramic-Standard
Ceramic-Miniature

**2 Connection Head**

with connecting thread	
B	(M24 x 1,5)
BUS	(M24 x 1,5)
BUZ	(M24 x 1,5)
BUZH	(M24 x 1,5)
BBK	(M24 x 1,5)
DL (MA)	(M10 x 1)

or with thread diameter of 15,3 mm

**3 Process Connector (Detachable)**

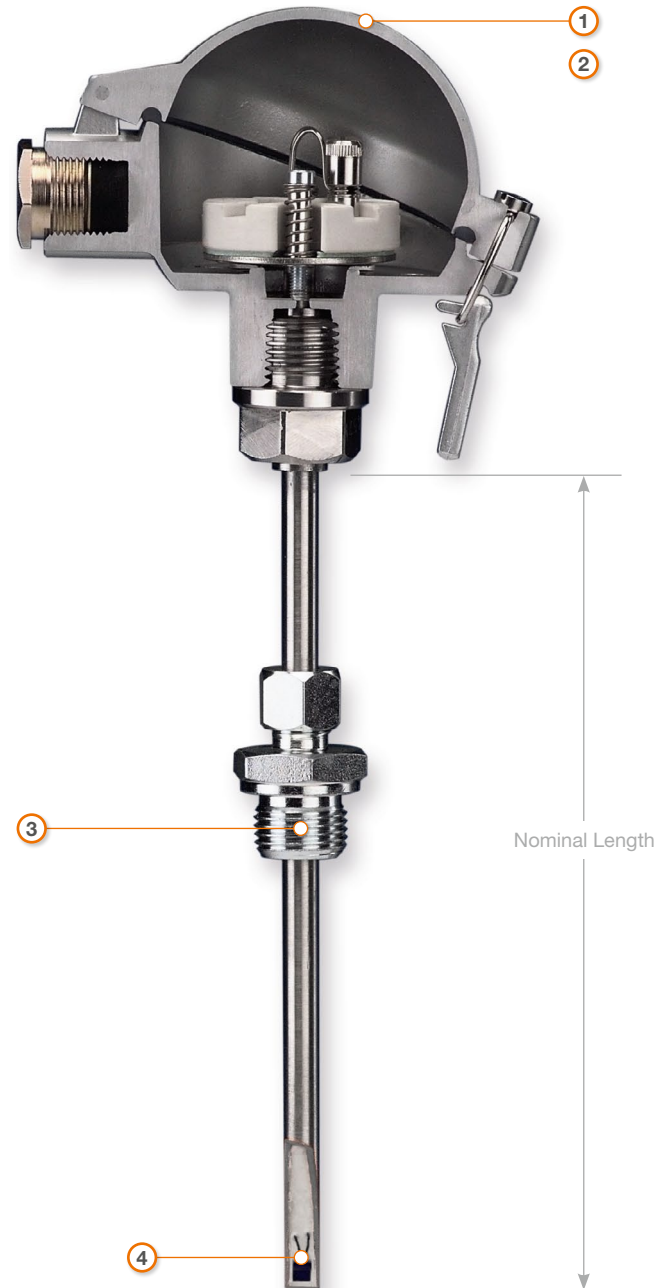
Clamp Connectors	Steel/High-Grade Steel
Pressure Ring	Teflon
Cutting Ring	High-Grade Steel

M 8x1 for Mantle Diameter 1,0-3,0 mm
G 1/8 A for Mantle Diameter 1,0-3,0 mm
G 1/4 A for Mantle Diameter 4,5-8,0 mm
G 1/2 A for Mantle Diameter 4,5-8,0 mm

**4 Mineral-Insulated Gauge Slide**

Mantle Diameter:	2,0 - 8,0 mm
Tip Diameter:	2,0 - 10,0 mm
<b>Connection:</b>	
1 x Pt100 up to 3 x Pt100 Ohm	
2-Wire up to 4-Wire	

Example of a common implementation in this product line



Individual Solutions such as, for example materials, process connectors, accessories, etc. not listed here, are often viable.

Please contact us for further information!

**52 - WOS // Sheath resistance thermometers without protection tube/thermowell**

Sheath resistance thermometer 

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**Contact terminations:**

Connection head with a connection thread			Connection head with a connecting diameter of 15.3 mm		
B	(M24 x 1.5)	20 10	B		25 10
BUS	(M24 x 1.5)	20 15	BUS		25 15
BUSH	(M24 x 1.5)	20 20	BUSH		25 20
BUZ	(M24 x 1.5)	20 25	BUZ		25 25
BUZH	(M24 x 1.5)	20 30	BUZH		25 30
BBK	(M24 x 1.5)	20 35	BBK		25 35
DL (MA)	(M10 x1)	20 40			

**Joining elements**

Plug			Coupler		
Lemo	Size 0	30 10	Lemo	Size 0	35 10
Lemo	Size 1	30 15	Lemo	Size 1	35 15
Lemo	Size 2	30 20	Lemo	Size 2	35 20
Lemo	Size 3	30 25	Lemo	Size 3	35 25
Standard		30 30	Standard		35 30
Miniature		30 35	Miniature		35 35
High-temp standard		30 40	High-temp standard		30 40
High-temp miniature		30 45	High-temp miniature		30 45

**Cable transition sleeve + compensation circuit** 4X XX  
(XXX = length of the compensation circuit in XX.X m)

**Sheath measurement inserts**

Sheath ø [mm]	2.0	3.0	4.5	6.0	6.0	6.0	8.0	8.0
Point ø [mm]	2.0	3.0	4.5	6.0	8.0	10.0	8.0	10.0

**Circuit**

1xPt100 ohm 2-wire	00	10	20	30	40	50	60	70
1xPt100 ohm 3-wire	01	11	21	31	41	51	61	71
1xPt100 ohm 4-wire	02	12	22	32	42	52	62	72
2xPt100 ohm 2-wire	03	13	23	33	43	53	63	73
2xPt100 ohm 3-wire	04	14	24	34	44	54	64	74
3xPt100 ohm 2-wire	05	15	25	35	45	55	65	75
2xPt100 ohm 4-wire	06	16	26	36	46	56	66	76

**Fastening**

**Attachment screw fastening:** Made of Steel / Stainless steel

**(Tapered ring, mat. no. 1.4541)**

M 8 x 1 for sheath ø 1.0-3.0 mm	11	21
G 1/8 A for sheath ø 1.0-3.0 mm	12	22
G 1/4 A for sheath ø 4.5-8.0 mm	13	23
G 1/2 A for sheath ø 4.5-8.0 mm	14	24

**(Tapered ring unit St. 35.8)**

		Screwed socket combined	
M 8 x 1 for sheath ø 1.0-3.0 mm	51	31	G 1/4 A 80
G 1/8 A for sheath ø 1.0-3.0 mm	52	32	G 3/8 A 81
G 1/4 A for sheath ø 4.5-8.0 mm	53	33	G 1/2 A 82
G 1/2 A for sheath ø 4.5-8.0 mm	54	34	G 1 A 83

**(Teflon thrust collar)**

M 8 x 1 for sheath ø 1.0-3.0 mm	61	41	M 20 x 1.5 84
G 1/8 A for sheath ø 1.0-3.0 mm	62	42	M 18 x 1.5 85
G 1/4 A for sheath ø 4.5-8.0 mm	63	43	M 14 x 1.5 86
G 1/2 A for sheath ø 4.5-8.0 mm	64	44	No fastening 99
			Other 88

Nominal length / mm



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Custom designs:

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9	9	5	2	x	x	x	x
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Consecutive no.

Nominal length / mm