

## ● Characteristics

1 - RESISTANCE THERMOMETER - RTD - PT100 -

		Number of certificate <b>TAA00002H6</b>	
	Measuring element:	RTD Pt 100, Pt 1000 (2-, 3-, 4-wire)	
Process connection:	several options available		
Option:	transmitter 4...20 mA (1x Pt100)		
Configuration:	measuring range programmable (Windows)		
Protection class:	IP67, electronics completely potted		
Material:	stainless steel 1.4571 (well and casing)		
Connection:	several options available		
Standard thermowell:	Ø6 x 1 mm, optionally Ø6 x 0,5 mm		

## ● Technical Data

### Input

Resistance thermometer: 1 x Pt 100(0) (2-, 3- or 4-wire), 2 x Pt 100(0) (2-wire)

### Output

Transmitter: 4...20 mA, 2-wire (load: max. (U<sub>b</sub> - 10 V) / 0,023 A)

### Accuracy

Resistance thermometer: Class A, DIN EN 60751 (sensor: HERAEUS M222)  
 Transmitter: 0,1K / 0,8% of adjusted range  
 Sensor current: <0,6 mA / Response time electronics: 1 s  
 Response time in water: Protecting tube 6x0,5 mm: z0,5~12,0 s / z0,9~30,9 s  
 Protecting tube 6x1,0 mm: z0,5~7,6 s / z0,9~22,1 s

### Functional and Measuring Range

Pt 100(0): Range -50...+200°C  
 Transmitter: Measuring range programmable (standard: 0...100°C)  
 Minimum span: 10 K

### Supply

Transmitter: 10...35 V, supply out of current loop

### Environmental Temperature Conditions

Operating: -50...+100°C, with transmitter: -40...+85°C  
 Storage: -50...+100°C, with transmitter: -40...+100°C

### Mechanics

Casing: Ø 26 x 63...86 mm + fitting length (dependent on electrical connection)  
 Material: Thermowell, casing body: stainless steel 1.4571  
 Weight: 200...240 g, fitting length 50 mm  
 Process connection: 1/4" / 3/8" / 1/2" / 3/4" / 1" / 1/4NPT / 3/8NPT / 1/2NPT  
 Electrical connection: MIL plug D 38999, 6-pole / Valve plug DIN EN 175301-803, 4-pole, type A  
 Plug M12x1, 4-pole / Cable entry M12x1,5 with 2 m cable  
 Protection class: IP67

## ● Applications

For use in heating installations, air-conditioning and ventilating plants. Due to the used materials and the compact design, this sensor with its small dimensions is very robust. The programmable transmitter reduces storekeeping considerably.



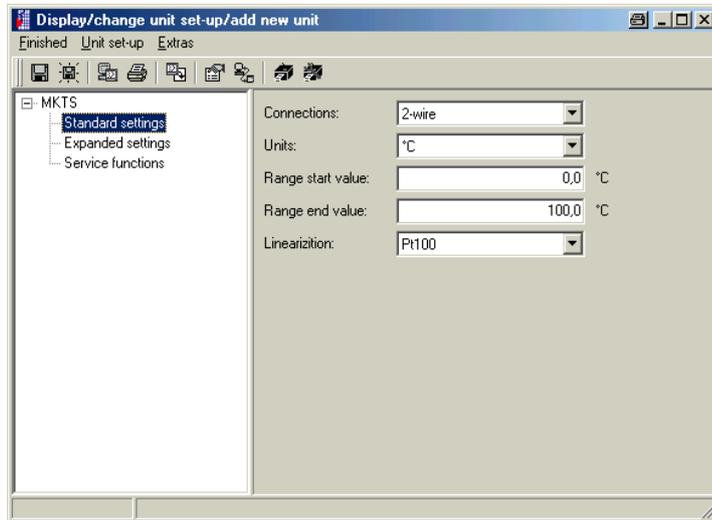
## ● Transmitter (Configuration)

MKTS-GL with transmitter can be configured comfortably by using a software.

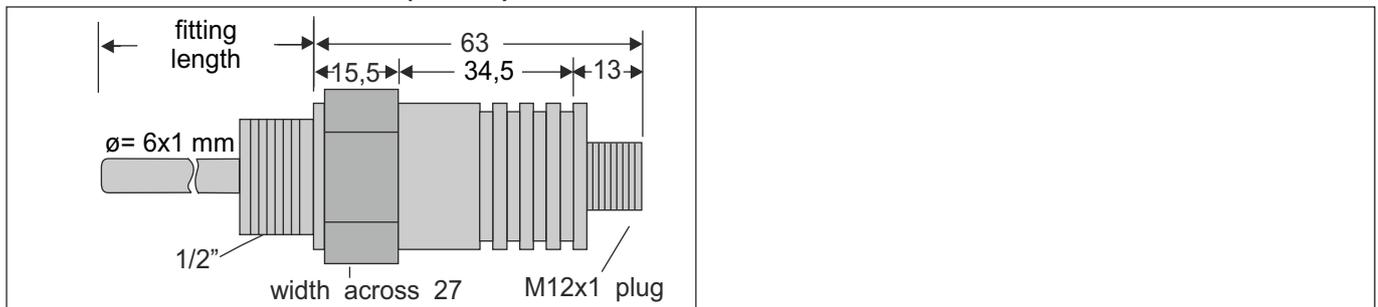
### Prestable parameters:

- Connection (2-, 3-, 4-wire)
- Simulation (on/off)
- Damping (0... 60s)
- Compensation resistance
- Units (°C/°F)
- Fault condition reaction
- Offset (-9,9...+9,9 K)
- Measurement ranges
- Output (analog standard/inverse)
- Identification/TAG

Scenshot of the software for configuration



## ● Dimensions, Connection (M12x1)



## ● Electrical Connection

Sensor Connection	2-wire $\vartheta \uparrow \uparrow$		3-wire $\vartheta \uparrow \uparrow$			4-wire $\vartheta \uparrow \uparrow$				2x 2-wire $\vartheta \uparrow \uparrow$				4-pole transmitter TxD RxD + -			
M12x1*	3	2	4	3	2	4	3	2	1	4	3	2	1	2	4	1	3
Valve plug	3	2	$\perp$	3	2	$\perp$	3	2	1	$\perp$	3	2	1	4	3	1	2
MIL plug	3	2	4	3	2	4	3	2	1	4	3	2	1	3	5	1	2
Cable	bn rt	gn ws	ge rt	bn rt	gn ws	ge rt	bn rt	gn ws	ws ws	gn rt	bn ws	ge sw	ws ge	bn	gn	ge	ws

\* The MKTS-GL with transmitter has lowered pins for programming. For normal use of the sensor a standard female plug is necessary, for the programming a special female plug which is included in the cable set (see accessories of MKTS-GL in data sheet/price list)

### Cable coding translation:

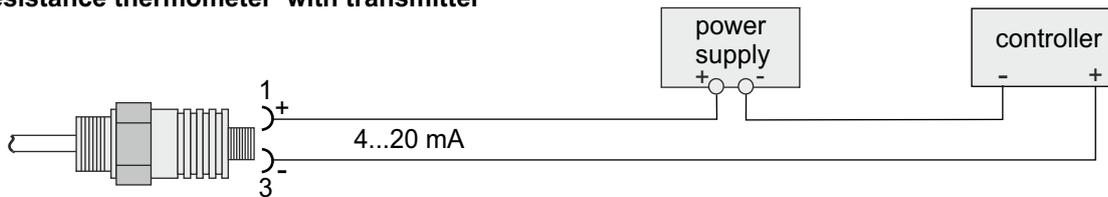
bn:	brown	ge:	yellow
gn:	green	ws:	white
rt:	red	sw:	black

## Specification Plug Connector

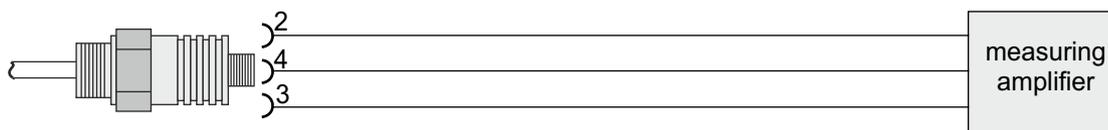
Type of connection	available on sensor	required counterpart
M12x1 plug connector 4-pole, A-coding	built-in plug M12x1, 4-pole Escha EWAS4 / Lumberg RSE	cable socket M12x1, 4-pole Escha WA..., WW... / Lumberg RK...
Solenoid valve plug connector model A (Binder series M-A)	built-in plug 4-pole (3+PE) DIN EN 175301-803	cable socket 4-pole (3+PE) DIN EN 175301-803
MIL plug connector	built-in plug D38999, 6-pole	cable socket D38999, 6-pole

## Connection Example M12x1

### Resistance thermometer with transmitter



### Resistance thermometer 3-wire



● **Order Code**

**M K X X X X - X - X X X X**

<b>Version:</b>	Without transmitter	A																		
	With transmitter	B																		
<b>Measuring element:</b>	Pt100		0																	
	Pt1000		1																	
	2x Pt100		2																	
	2x Pt1000		3																	
<b>Sensor:</b>	2-wire						0													
	3-wire						1													
	4-wire						2													
<b>Accuracy:</b>	Class A																			0
<b>Fitting length:</b>	Up to 300 mm (please specify) <sup>1</sup>																			0
<b>Process connection:</b>	1/2"																			0
	1/4"																			1
	3/8"																			2
	3/4"																			3
	1"																			4
	1/4NPT																			5
	3/8NPT																			6
	3/4NPT																			7
	1/2NPT																			8
	1NPT																			9
	M14x1,5																			A
<b>Electr. connection:</b>	M12x1, 4-polig																			0
	Valve plug, DIN EN 175301-803, 4-pole																			1
	MIL plug, 6-pole																			2
	Cable, 2 m (Teflon/Silikon)																			3
	M12x1, 8-pole																			4
<b>Range transmitter:</b>	Standard (0...100 °C)																			0
	Other (please specify) <sup>2</sup>																			1
<b>Other:</b>	Special model																			0

1): Within range 10...300 mm

2): Within range -50...+200°C

**Note:** The version M12x1 with transmitter is available as special model only. It is possible to use a standard M12x1 cable socket for the sensor connection. For sensor programming, a special socket is necessary. The socket plug has lowered pins and is included in the programming cable set.

**Accessories**

Socket: M12x1, 4-pole / valve, DIN EN 175301-803, 4-pole / MIL, D3899, 6-pole

Cable set for programming: M12x1 / MIL / valve / cable

Adaptor for programming, software / software

Flange for ventilating tube

Protecting tube