

## Resistance thermometer LTS 120

### Features

- Resistance thermometer without neck tube, with screw-in thread
- With process connection thread
- Protective fitting on DIN 43 763
- Protective fitting screwed with connection head
- Available with several connection heads on DIN
- Exchangeable measuring elements with ceramic socket or programmable measuring transducer
- Passive (connection via terminals) or with a measuring transducer
- available with:
  - digital measuring transducer DMU100 (4..20 mA 3-wire / OLED display)
  - head transmitter KMU100 (4..20 mA 2-wire)
  - head transmitter KMUS100 (0..10 V 3-wire)
- Special designs on request

### Product benefits

The LTS 120 is a temperature sensor for use in liquid and vapor mediums. With the thread as process connection it can be easily integrated into many industrial applications. The simple exchange of the measuring element also makes this sensor ideal for use in closed processes. High-quality materials give this sensor a very high long-term stability. The LTS 120 is also available with different measuring transducers.

### Technical specifications

- Protection fitting made of stainless steel 1.4571
- Diameter of neck tube 9 x 1 mm, other diameters on request
- Process connection thread G 1/2"A, other on request
- Standard temperature of the process: -50 °C to +400 °C (extended ranges on request)
- Deviation in operating temperature when using a transmitter



**LTS 120-5-1B-1A3-KMU**



**LTS 120-1-B-1A3-KMU**



Exchangeable measuring element



Also available with display (DMU100)

### Technical data DMU100

- Operating temperature: -30 °C..+70 °C
- Operating voltage: UB = 10..35 V DC
- Current requirement: 7.3 mA (UB = 24 V) + 4..20 mA output
- Input: PT1000 2-wire
- Measuring range max.: -100°C..+650°C
- Measuring span min.: 10 K
- Measuring deviation: <+0.1% of the final value
- Output: 4..20 mA 3-wire (underflow 3.5 mA, overflow 20.5 mA)
- Sensor break: 21 mA
- Standard configuration: 4 mA = -50 °C, 20 mA = 150 °C  
(wider temperature ranges can be parameterized by factory)
- Max. permissible load:  $R_{max} = [(UB - 6 V) / 0.021 A] \Omega$
- Display: high-resolution OLED display 0.96 inches
- Orientation display: 0° or 180°
- Display digits: 4 digits
- Display range: -99.9 to +999.9°C
- Configuration: by factory



### Technical data KMU100

- Operating temperature: -40 °C..+85 °C
- Operating voltage: UB = 10..35 VDC
- Current requirement: 4..20 mA output
- Input: PT100 2, 3, 4 wire
- Measuring range max.: -200°C..+650°C
- Measuring span min.: 10 K
- Measuring deviation: <+0.1% of the final value
- Output: 4-20 mA (underflow 3.5 mA, overflow 21 mA)
- Sensor break: 22 mA
- Standard configuration: 4 mA = -50°C, 20 mA = 150°C  
(wider temperature ranges can be parameterized by factory)
- Ambient temperature: operating temperature -40°C..85°C
- Electrical connection: 6x screw terminals 1.5mm<sup>2</sup>
- Configuration: by factory

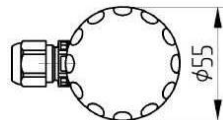
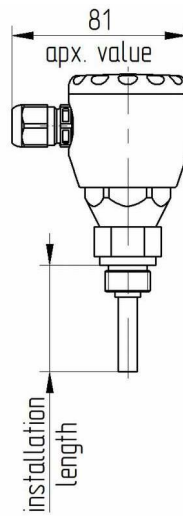
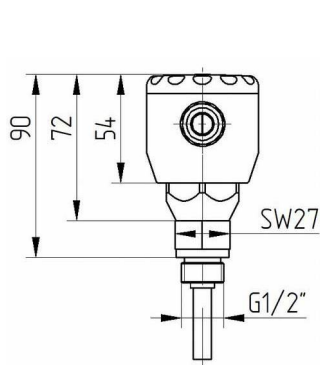


### Technical data KMUS100

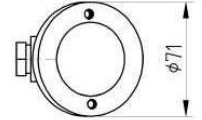
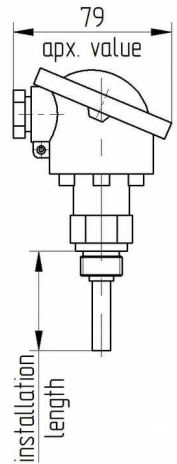
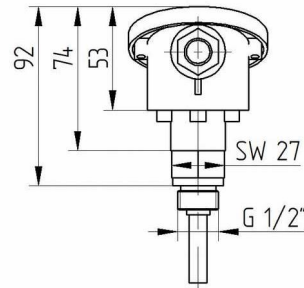
- Operating temperature: -40 °C..+85 °C
- Operating voltage: UB = 15..35 V DC
- Current requirement: max. 10 mA
- Input: PT100/PT1000 2-, 3-, 4-wire
- Measuring range: 12 measuring ranges, see page 3
- Measuring deviation: <+0.3% of measuring range
- Output: 0..10 V 3-wire
- Sensor break: >10V
- Standard configuration: 0V = -20°C, 10V = 150°C
- Electrical connection: 6 screw terminals 1.5mm<sup>2</sup>
- Configuration: DIP switch (12 different measuring ranges)

**Technical drawing LTS 120**

**Stainless steel head**



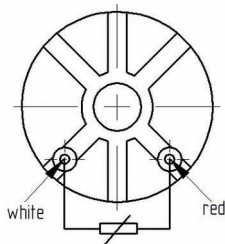
**Aluminium head**



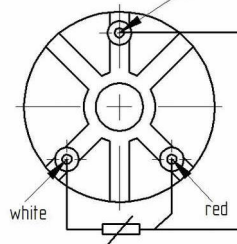
**Connection LTS 120**

**Connection LTS 120 passive (ceramic base)**

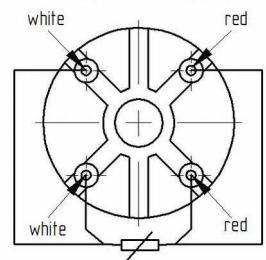
**1 x PT 2-wire**



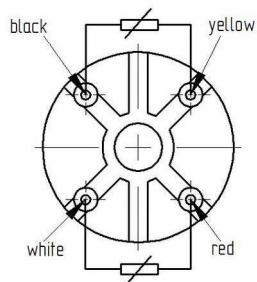
**1 x PT 3-wire**



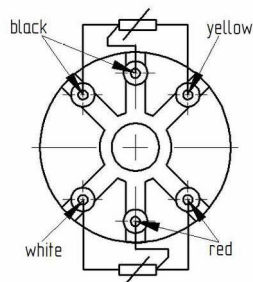
**1 x PT 4-wire**



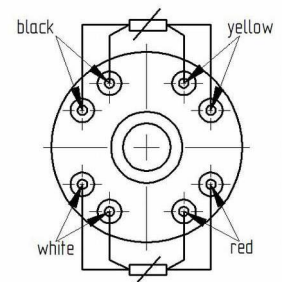
**2 x PT 2-wire**



**2 x PT 3-wire**



**2 x PT 4-wire**



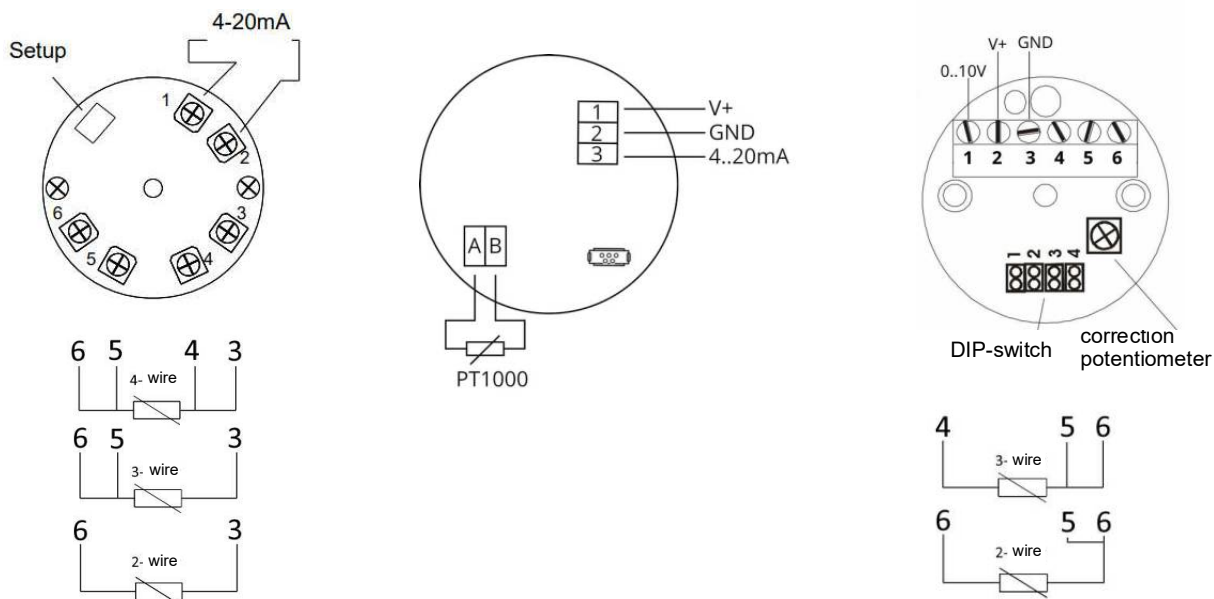
# LTS 120

Temperature sensor with exchangeable  
measuring insert: LTS 120 - with screw-in thread

LR-Cal

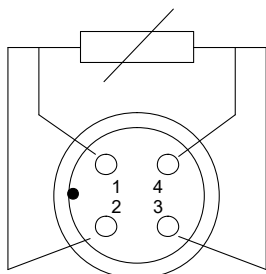


## Connection LTS 120 with measuring transducer

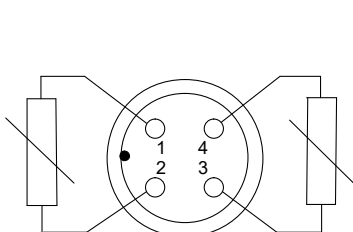


## Connection LTS 120 with M12 plug

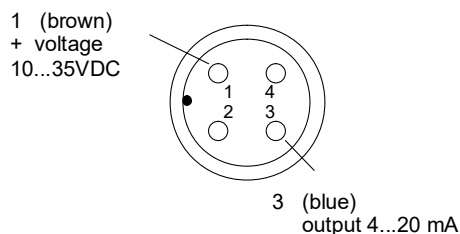
**M12 plug  
PT100 and PT1000**



**M12 plug  
2x PT100 and 2x PT1000**



**M12 plug with measuring transducer**



## Configuration

The configuration of KMU100 and DMU100 is made by factory.

The configuration of KMUS100 can be made by user via 4 DIP switches according to table.

„Messbereich“ = measuring range

„DIP-Sch.“ = DIP switches

Nr.	Messbereich	DIP-Sch.
		1 2 3 4
MB1:	- 20°C .. +150°C	1-1-1-1
MB2:	0°C .. + 50°C	0-1-1-1
MB3:	0°C .. +100°C	1-0-1-1
MB4:	0°C .. +200°C	0-0-1-1
MB5:	0°C .. +300°C	1-1-0-1
MB6:	0°C .. +400°C	0-1-0-1
MB7:	0°C .. +500°C	1-0-0-1
MB8:	0°C .. +600°C	0-0-0-1
MB9:	- 50°C .. + 50°C	1-1-1-0
MB10:	-100°C .. +100°C	0-1-1-0
MB11:	- 30°C .. + 70°C	1-0-1-0
MB12:	- 40°C .. + 60°C	0-0-1-0

Jumper = 1: plugged in, Jumper = 0: not plugged in

**Attention:** Only ranges MB1...MB5  
are available for Pt1000

**Order code LTS 120...**
**order example: LTS 120-5-A-1A3-KMU (0-100 °C)**

### Connection heads

-1	aluminiumhead,	standard,	with screwing,	protection class IP65
-2	aluminiumhead	with flap lid,	with screwing,	protection class IP65
-2W	aluminiumhead	with flap lid,	with screw connection,	protection class IP65 with window
-3	aluminiumhead	with flap lid and snap closing,	with screwing,	protection class IP54
-4	aluminiumhead	with high flap lid,	with screwing,	protection class IP65
-5	stainless steel head	standard with screw cap,	with screwing,	protection class IP69K
-6	stainless steel head	standard with screw cap,	with M12-plug,	protection class IP69K
-15	stainless steel head	hightened design	with screwing	protection class IP69K
-16	stainless steel head	hightened design	with M12-plug	protection class IP69K

### Mounting length (ML)

-A	50 mm mounting length
-B	100 mm mounting length
-C	160 mm mounting length
-D	200 mm mounting length
-E	250 mm mounting length
-F	300 mm mounting length
-G	350 mm mounting length
-H	400 mm mounting length
-K	mounting length on customer's request (please specify length)

#### optional (not specified diameter 9mm)

/6x1	diameter 6mm, wall strength 1mm
/10x1	diameter 10mm, wall strength 1mm
/11x2	diameter 11mm, wall strength 2mm
/16x4	diameter 16mm, wall strength 4mm

### Type of sensor and tolerance

-1A2	1xPT100 class A 2-wire
-1A3	1xPT100 class A 3-wire
-1A4	1xPT100 class A 4-wire
-2A2	2xPT100 class A 2-wire
-2A3	2xPT100 class A 3-wire
-1A2/PT1000	1xPT1000 class A 2-wire
-2A2/PT1000	2xPT1000 class A 2-wire
-KX	other types or sensor and tolerance on customer's request

### Optional (several combinations possible)

**When using a measuring transducer, please specify the temperature range!**

-KMU	with head transmitter KMU100	(4..20mA 2-wire)
-2KMU	with 2 head transmitters KMU100	(4..20mA 2-wire), head increased design required
-KMUS	with head transmitter KMUS100	(0..10V 3-wire)
-DMU	with digital measuring transducer DMU50	(4..20mA 3-wire, OLED display) only with aluminum head "2W" jacket
-MME	measuring insert, vibration-proof	
-PS	perforated protective fitting (air sensor)	

### Accessories

#### Welding sleeves

-99-000421	GEM 150, stainless steel weld-in sleeve, G1/2" inner thread, outer diameter 26mm, length sleeve 33mm
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#### M12 connection wires

-101090	connection cable M12 angled, 4-pole, 5m PVC cable, grey
-101087	connection cable M12 straight, 4-pole, 5m PVC cable, grey

**Other lengths available on request.**

**For more accessories, see accessories data sheet.**