promesstec GmbH

resistance thermometer WTR 130

features

- resistance thermometer without neck tube and without screw in thread
- flat protective fitting without process connecting thread
- protective fitting with different clamp screw fittings adaptable
- protective fitting with different weld-in screwings adaptable
- protective fitting screwed with connection head
- available with different connection heads on DIN
- temperature resistance installed in interchangeable bar measuring insert
- measuring insert available with ceramic base or measuring transducer
- passive (connection via terminals) or with a measuring transducer
- available with:
    digital measuring transducer DMU 100 (4..20mA 3-wire/OLED display)
    head transmitter KMU 100 (4..20mA 2-wire)
    head transmitter KMUS 100 (0..10V 3-wire)
- special designs on request

WTR 130-1-B-1A3-KMU

product benefits

Our WTR 130 is an immersion temperature sensor with a smooth protection fitting. This makes it suitable for use in both liquid and vapour mediums. 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 durability. The WTR 130 is also available with different measuring transducers.

WTR 130-5-B-1A3-KMU

technical specifications

- protection fitting made of stainless steel 1.4571
- diameter 6 x 1 mm, other diameters on request
- aseptic measuring points with welded screwing possible
- temperature range: -50 °C to +400 °C
  (extended ranges on request)
  Deviation in operating temperature when using a transmitter

exchangeable measuring element

Also available with display (DMU100)

resistance thermometer WTR 130

technical data DMU 100

- operating temperature: -30 °C..+70 °C
- operating voltage: UB = 10..35 V DC
- current requirement: 7.3 mA (UB=24V) + 4..20mA 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..20mA 3-wire (underflow 3.5mA, overflow 20.5mA)
- sensor break: 21mA
- standard configuration: 4 mA = -50 °C, 20 mA = 150 °C
                            (wide temperature range can be parameterized)
- max. permissible load: $R_{max}=[(UB – 6V) / 0.021 A]\ \Omega$
- 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 interface: USB Type C
- electrical connection: 5x terminal connection 1.5 mm²
- configuration: commercially available USB Type C cable (no programming adapter necessary)
                            windows application for configuration ("pmtKonfigTool")

technical data KMU 100

- operating temperature: -40 °C..+85 °C
- operating voltage: UB = 10..36VDC
- current requirement: 4..20mA output
- input: PT100 or PT1000 2, 3, 4 wire
- measuring range max.   Pt100: -200°C..+850°C; Pt1000: –200°C … +250 °C
- measuring span min.:   10 K
- measuring deviation: across the entire range: 0.15 K or 0.07% of span*
                            n the range -50°C … +250°C: 0.1 K or 0.07% of the measuring span*
- output: 4-20mA (underflow linear drop of 4.0 ... 3.8 mA,
                            linear increase of 20.0 … 20.5 mA)
- sensor break: ≤ 3.6 mA ("Low") or ≥ 21 mA ("High") can be selected
- standard configuration   4mA = -50°C, 20mA = 150°C
                            (wide temperature range can be parameterized)
- electrical connection: 6x screw terminals 1.5mm²
- configuration: PXU01 programming adapter
                            Windows application for configuration ("PXU01")

* the larger value is valid

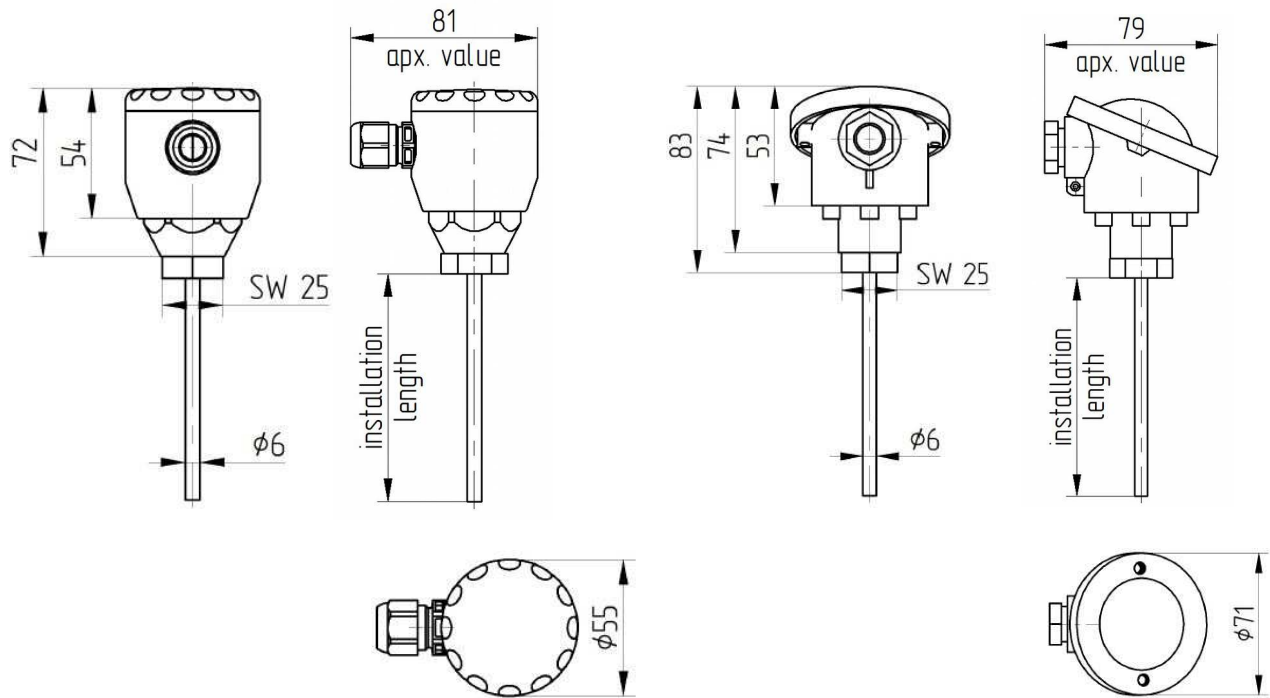### technical data KMUS 100

- operating temperature: -40 °C..+85 °C
- operating voltage: UB = 15..35 V DC
- current requirement: max. 10mA
- input: PT100/PT1000 2-, 3-, 4-wire
- measuring range   12 measuring ranges, see page 3
- measuring deviation: <+-0.3% of measuring range
- output: 0..10V 3-wire
- sensor break: >10V
- standard configuration: 0V = -20°C, 10V = 150°C
- electrical connection: 6 screw terminals 1.5mm2
- configuration: DIP switch (12 different measuring ranges)

technical drawing WTR 130

stainless steel head

aluminiumhead

81
apx. value

72
54
SW 25
⌀6
installation length

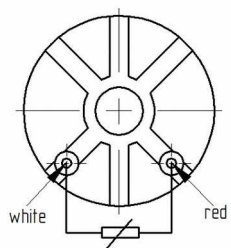79
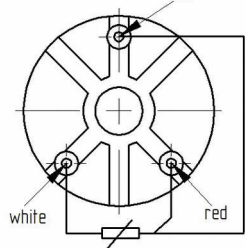apx. value

83
74
53
SW 25
⌀6
installation length

⌀55

⌀71

connection WTR 130

connection WTR 130 passive (ceramic base)

1 x PT 2-wire

white   red

1 x PT 3-wire

red

white   red

1 x PT 4-wire
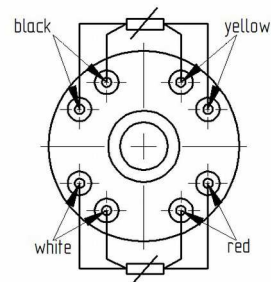
white   red

white   red

2 x PT 2-wire

black   yellow

white   red

2 x PT 3-wire

black   yellow

white   red

2 x PT 4-wire

black   yellow

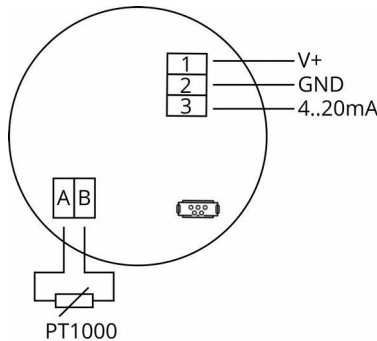white   red
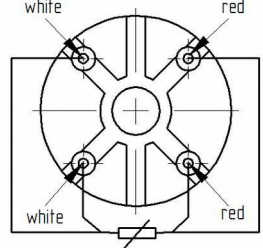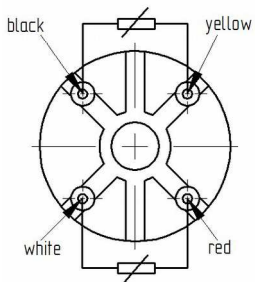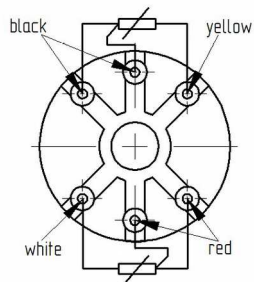
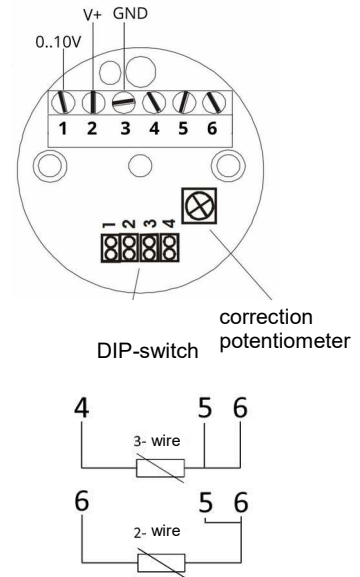## connection WTR 130 with measuring transducer

WTR 130 with KMU 100
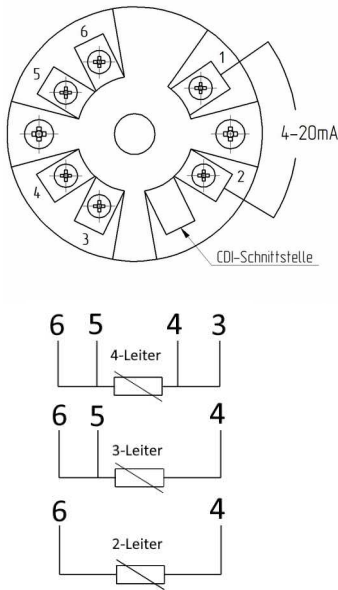
WTR 130 with DMU 100

WTR 130 with KMUS 100

Connection WTR 130 with M12 plug

M12 plug
PT100 and PT1000
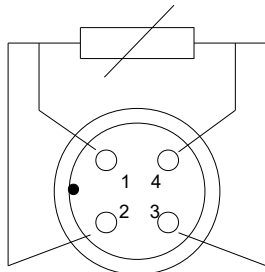
M12 plug
2x PT100 and 2x PT1000
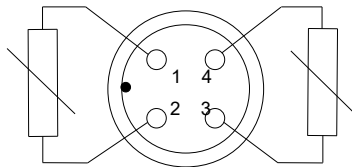
M12 plug with measuring transducer

1 (brown)
+ voltage
10...35VDC

3 (blue)
output 4...20mA
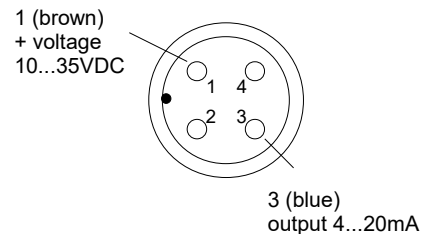
configuration

If the WTR 130 is used with a DMU 100, the DMU settings can be read out, graphically displayed and changed using the Windows software "pmtKonfigTool". The Windows software can be downloaded from the website www.promesstec.de. The connection between PC and MUFG-DMU can be established with a standard USB Type C cable.

If the WTR 130 is used with a KMU 100, the settings of the KMU can be read out, graphically displayed and changed using the PXU01 parameterization software kit. In addition to the software, the software kit also includes a programming adapter.

If the WTR 130 is used with a KMUS 100, the measuring range can be adjusted using four DIP switches. The measuring ranges are listed in the table below. There is also a correction potentiometer on the top of the head transmitter, which can be used to fine-tune the output voltage. A seal secures the potentiometer against accidental adjustment.

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 1..5 are available for Pt1000.

order-code WTR 130...	order example WTR 130-5-A-1A3-KMU (0-100 °C)

Anschlussköpfe

-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)

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 tolenance on customer`s request

optional (several combinations possible)

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

-KMU	with head transmitter KMU 100	(4..20mA 2-wire)
-2KMU	with 2 head transmitters KMU 100	(4..20mA 2-wire), head increased design required
-KMUS	with head transmitter KMUS 100	(0..10V 3-wire)
-DMU	with digital measuring transducer DMU50 (4..20mA 3-wire, OLED display) only with aluminum connection head "2W"	
-MME	jacket measuring insert, vibration-proof	
-PS	perforated protective fitting (air sensor)	

accessories

clamp screw fittings

-99-000197	KVS6E-1/2" clamp screw fitting
-99-000199	KVS6T-1/2" clamp screw fitting with screw-in thread, for 6mm sensor, clamping ring made of Teflon, material 1.4571
-99-000512	KVS6E-1/4" clamp screw fitting
-99-000198	KVS6T-1/4" clamp screw fitting
-99-000196	KKVS6P bullet clamp bolting, for 6mm tube, PEEK sealing ring, material 1.4404

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.