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JUMO dicoTEMP 100

Smart tube for temperature measurement

Special features

- Diverse[1] temperature measurement for increased process reliability
- Combination of a platinum-chip temperature sensor with a thermostat or dial thermometer in a fitting
- Reduced planning and installation work because only one measuring point is required
- Maximum flexibility for data usage; various output signals, such as resistance, analog, or digital, are available



Brief description

The smart tube enables diverse temperature measurement to be implemented with a thermostat or dial thermometer and a platinum-chip temperature sensor. This occurs at only one measuring point. The resistance signal can be converted into an analog or digital signal via a transmitter.

The smart fitting for temperature measurement combines the strengths of several JUMO devices. The new solution allows the user to continue using the devices (thermostats and dial thermometers) that are already part of the process at the same measuring point and, at the same time, functionally extend them with electrical temperature measurement.

[1] "diverse" means that with this solution, two different measuring principles (electrical and mechanical) are used, each of which has a different effect on external interference factors

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Technical data

General Information

Prozessanschlüsse				
smooth pipe				
smooth pipe	With optional accessories: G 1/2 or G1 threaded fitting (see chapter on dimensions)			
G 1/2				
TA24	G 1/2			
TA24	G 1			
Pipe diameter				
Outer diamer „D“ in mm	11.0	13.0	15.0	
Inner diameter „di“ in mm	6.2	8.2	10.2	For the insertion of typical probe or immersion tube diameters with 6, 8, or 10 mm
Fastening on the device				Combination:
Capillary line version	x	x		Possible with probe diameter 6 and 8 mm including capillary line from 1.0 to 2.2 mm
Coupling version		x		Possible with immersion tube diameter 8 mm including coupling version (see chapter on dimensions)
Threaded fitting version	x	x	x	Possible with smooth immersion tube outside diameters of 6, 8, and 10 mm
Material	Stainless steel (TA24: Stainless steel, brass, FKM)			
Measuring insert				
Pt100	Temperature sensor according to DIN EN 60751:2009/IEC 60751:2008			
Pt1000	in four-wire circuit with selectable tolerance classes: B, A, AA			

Capacity Thermowell[a]	Temperature in °C	Pipe diameter in mm		
		11	13	15
		Maximum admissible pressure in bar		
	100	74	62	50
	150	71	59	48
	200	67	56	45
	260	58	48	39

Electrical connection	Machine connector M12 × 1 mm, 4-pole, according to IEC 60947-5-2

[a] Pressure data from table not valid, process connection is intended for pressureless use.

Environmental influences

Maximum admissible temperatures					
Medium, process	-40 to +260 °C (TA24: -40 to +150 °C)				
Environment	-40 to +85 °C				
Storage and transport	-40 btois +85 °C				
Process media	Liquid and gaseous				
Response times of the thermowell without combination device	Measured in	t_{05} [s]	t_{063} [s]	t_{09} [s]	Diameter „D“ of the protection tube [mm]
	Water 0.4 m/s	4	6	13	11
		5	7	17	13
		11	14	38	15
	Air 3.0 m/s	70	95	205	11
		75	105	215	13
		95	125	255	15
Installation position	Any				
Weight	Approx. 250 g (with 200 mm insertion length)				
Protection type with mating connector and mounted combination device	IP66, IP67, IP69 according to DIN EN 60529				

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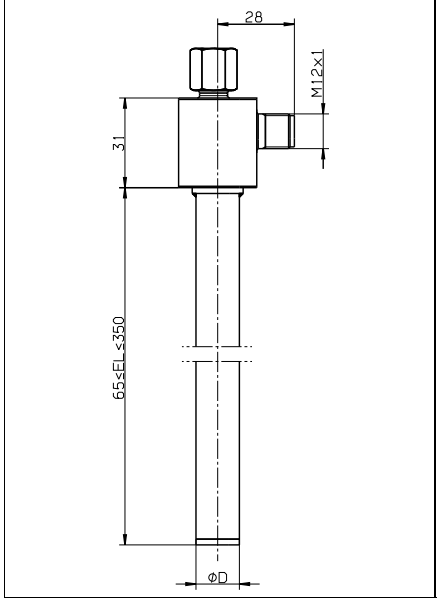
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Dimensions

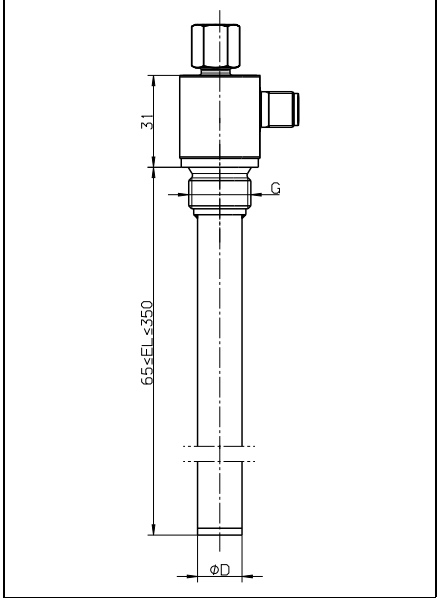
Process connection

Illustrations with examples of threaded fitting version

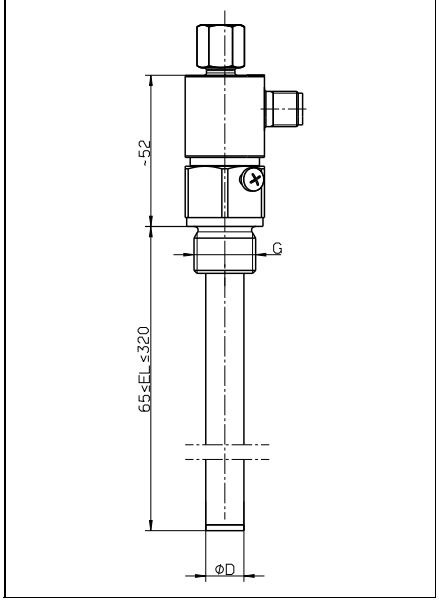
080
Smooth pipe



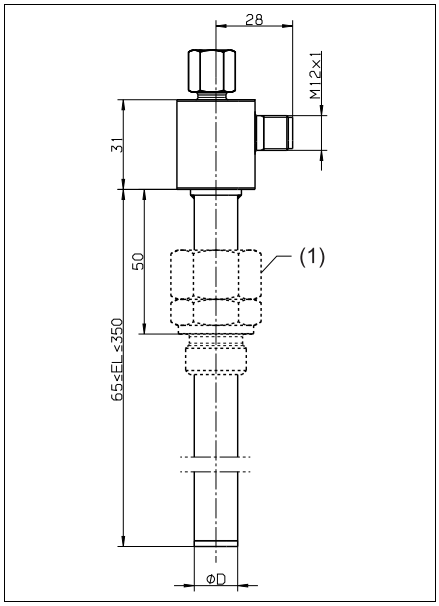
104
G 1/2



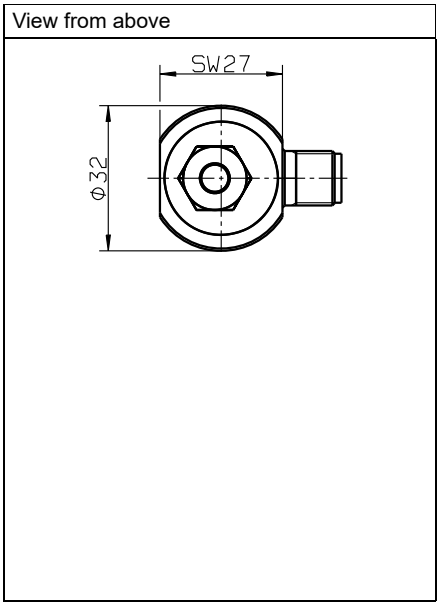
830, 831
TA24



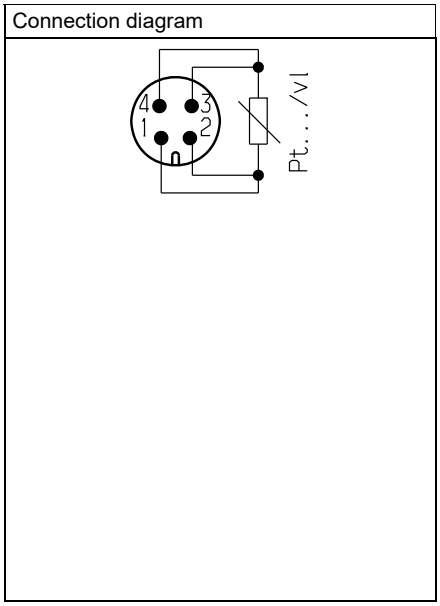
Process connection mounting example, view from above, connection diagram



View from above



Connection diagram



(1) Smooth pipe with accessories: G1/2 or G1 Threaded fitting

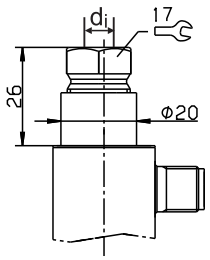
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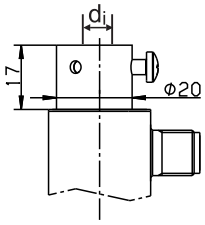
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Fastening on the device

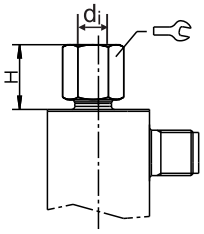
100
Capillary line version



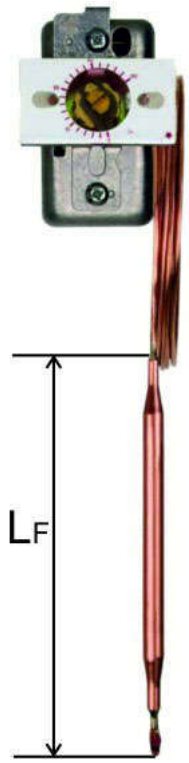
200
Coupling version



300
Threaded fitting version



Possible combination devices



Can be combined with thermostat or dial thermometer probe with length L_F



Can be combined with coupling version with immersion tube length L_K

Probe Ø	6	8	10
H	21	21	23
⊂⊃	14	17	19



Possible with a device (e.g. thermostat, dial thermometer) with immersion tube length L_T

Length specification of the combination devices

$L_F \leq$ EL - 5 mm	$L_K \leq$ EL + 24 mm	$L_T \geq$ EL + 31 mm + H

The insertion length **EL** refers to the JUMO dicoTEMP 100, see order code.

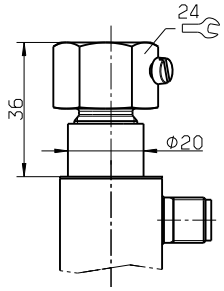
For process connection TA24, all preset lengths must be extended by 20 mm (e.g. $L_F \leq$ EL + 15 mm).

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Accessories

Mounting ATH thermostat (fastening on the device capillary line required)


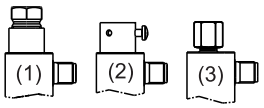
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Order details

	(1)	**Basic type**
608740		JUMO dicoTEMP 100 – Smart tube for temperature measurement
	(2)	Basic type extensions
10		Thermowell with resistance signal
	(3)	**Fastening on the device**
100		Capillary line version (1)
200		Coupling version (2)
300		Threaded fitting version (3)
	(4)	**Measuring insert**
1011		1x Pt100 in four-wire circuit
1013		1x Pt1000 in four-wire circuit
	(5)	**Tolerance class according to DIN EN 60751**
1		Class B
2		Class A
3		Class AA
	(6)	**Process connection**
080		Smooth pipe[a]
104		Screw connection G 1/2
830		Screw connection TA24 G 1/2
831		Screw connection TA24 G 1
	(7)	**Outer diameter of thermowell (D)**
11		11 mm (6 mm probe)
13		13 mm (8 mm probe)
15		15 mm (10 mm probe)
	(8)	**Material**
20		CrNi (stainless steel)
	(9)	**Insertion length (EL) in mm**
065		65
100		100
120		120
150		150
200		200
250		250
300		300
350		350
	(10)	**Extra codes**
000		None
374		Inspection certificate 3.1, DIN EN 10204 (material)
774		DAkks calibration (specify in plain text)



[a] With optional accessories: Threaded fitting G 1/2 or G 1 (see chapter on dimensions)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Order code		/		-		-		-		-		-		-		-		/		, ...[a]
Order example	608740	/	10	-	100	-	1013	-	1	-	104	-	11	-	20	-	100	/	000	

[a] List extra codes in sequence and separate using commas.

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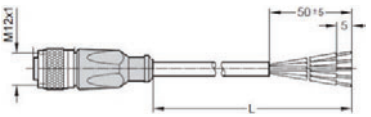
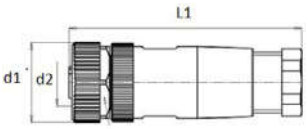
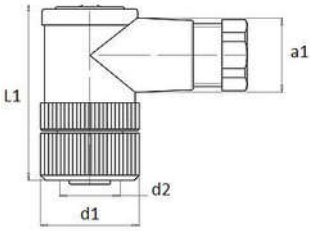
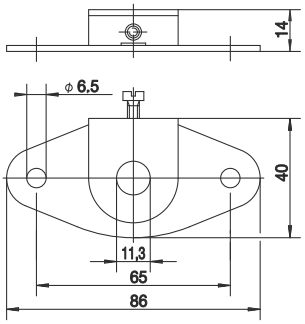
Stock versions

Order code	Part no.
608740/10-100-1013-1-080-11-20-150/000	60003446
608740/10-300-1011-1-080-13-20-150/000	60003449
608740/10-200-1011-1-830-13-20-150/000[a]	60003452
608740/10-200-1011-1-831-13-20-150/000[b]	60003453

[a] with G 1/2 screw connection for JUMO transformer thermometers 608005, 608520, 608540

[b] with G 1 screw connection for JUMO transformer thermometers 608005, 608520, 608540

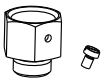
Accessories

Article					Part no.
Stainless steel threaded fittings, with stainless steel clamping ring (see data sheet 909750)	Outer diameter Thermowell	D = 11 mm	G 1/2 threaded fitting		00402801
		D = 13 mm			00717258
		D = 15 mm			00048311
		D = 11 mm	G 1 threaded fitting		00717265
		D = 13 mm			00717266
		D = 15 mm			00717269
Connection cables	JUMO M12 connecting cable		5-pole	0.5 m	00638312
				1.5 m	00638313
	PVC connecting cable				00404585
Cable sockets to assemble yourself	Straight cable socket				00419130
	Angled cable socket				00419133
Sheet flange (see data sheet 909750)	Flange made from zinc-plated steel for outer diameter Thermowell D = 11 mm				00038513
Cable transmitter (see data sheet 707090)	707090/8-1011/000	4 to 20 mA			00725428
	707090/8-1013/000				00725430
	707091/8-1011/000	IO-Link			00725432
	707091/8-1013/000				00725433

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Article		**Part no.**
Mounting ATH thermostat		00738162