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JUMO Process Control, Inc.
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JUMO dTHERM-M

- Digital indicator for panel or surface mounting with integrated 2-wire transmitter
- Stainless steel housing with bayonet lock
- IP65 protection
- Housing size: 100mm dia.

Brief description

The JUMO dTHERM-M features a 3½-digit LC display with 13 mm digit height and an integrated 2-wire transmitter. The supply for the indicator is provided by wiring it in series into the 4 – 20 mA current loop, so that no additional cables are required.

JUMO-dTHERM-M indicators are universal instruments, either for connection to external Pt100 resistance thermometers or with an integral Pt100, and are used for temperature measurement and indication.



Type 608624/1710

Technical data

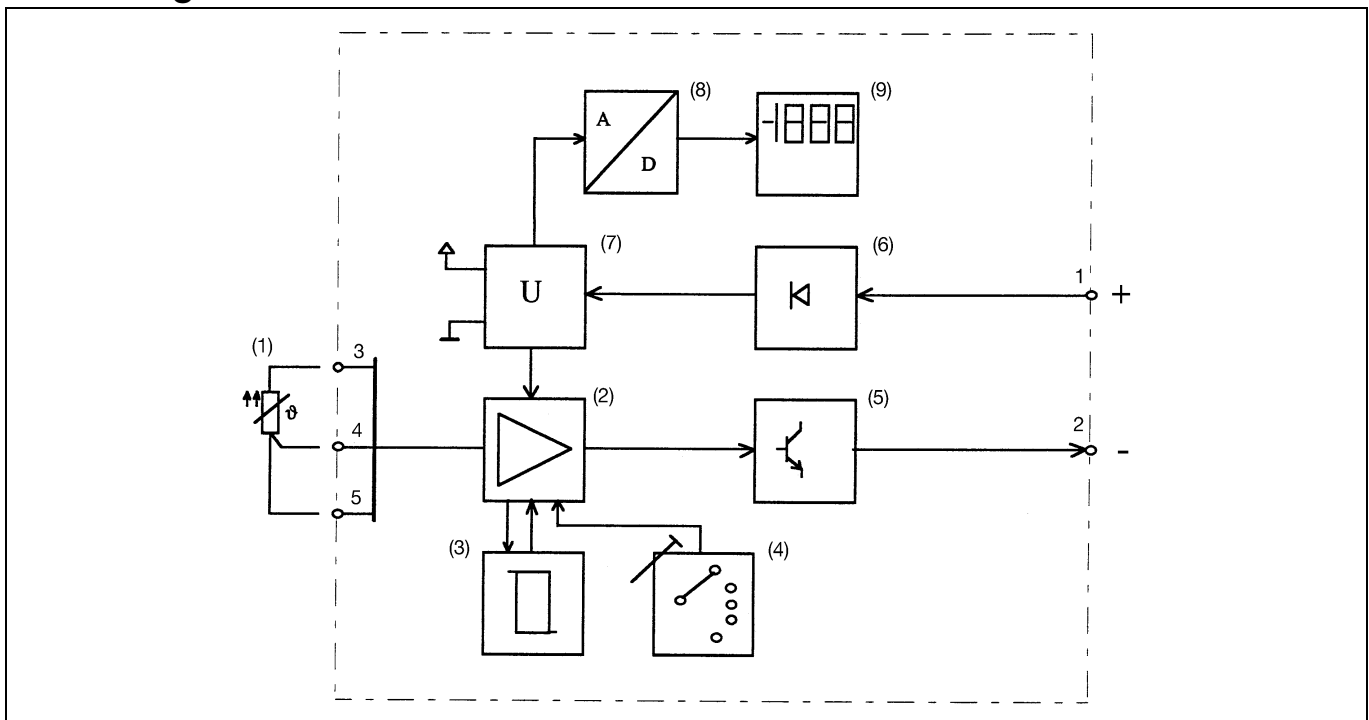
Housing	housing and bezel or flange in stainless steel (1.4301) angle block in aluminium (Style 17)		
Measurement input	Pt100 resistance thermometer in 3-wire circuit (on Styles 20 and 23). A 2-wire circuit without lead compensation can be implemented via an external link between the terminals 4 and 5.		
Display	3½-digit LCD with 13 mm digit height		
Transfer characteristic	linear with temperature		
Linearity error	≤ 0.2% of full scale		
Calibration accuracy	≤ 0.5% of full scale		
Indication accuracy	≤ 0.2% of full scale ±1 digit		
Display format	1 °C (0.1 °C with extra code 465)		
Supply	12 – 30 V DC		
Max. current drawn	approx. 30 mA		
Supply voltage error	≤ 0.02% of span per volt (deviation from 24 V DC)		
Output signal	4 – 20 mA		
Burden (Rb)	Rb ≤ (Ub-12 V) / 20 mA		
Burden error	≤ ±0.02% of span per 100 Ω burden		
Probe break/short-circuit	current output < 2.5 mA, displayed value below start of range		
	Style 01	Style 20, 23	Style 10, 17
Electrical connection	connection for one cable connection with earth terminal; gland for 6.5 to 13 mm cable diameter; conductor cross-section up to 2.5 mm ²	connection for two cables with 3 to 5 mm dia.	connection for one cable; terminal box to DIN 43650 (connector); gland for 6 to 8 mm cable diameter; conductor cross- section up to 1.5 mm ²
	All input and output cables without connection to the mains supply must be arranged as twisted and screened cables. Ground the screen on the instrument side to the potential earth.		
Operating temperature range	0 to +60°C (temperature at the housing)		
Storage temperature range	0 to +60°C		
Ambient temperature effect	referred to the deviation from the +23°C reference value		
Display	≤ 0.2% / 10 °C temperature change		
Current output	≤ 0.1% / 10 °C temperature change		
EMC	EN 61326		
Interference emission	Class B		
Interference immunity	to general requirements		
Protection	IP65 as per EN 60529		
Time constant	T _{0.632} approx. 19sec (measured in agitated water with a 10 mm dia. probe)		



Connection diagram

	Supply 12 – 30 V DC Current output 4 – 20 mA
	Resistance thermometer in 3-wire circuit on Styles 20 and 23 or
	Resistance thermometer in 2-wire circuit via an external link on Styles 20 and 23 (note lead resistance)
	PE conductor

Block diagram



Function

The transmitter converts the temperature-dependent change in resistance of a Pt100 resistance thermometer into a proportional DC current signal. The resistance thermometer (1) can be connected in 2- or 3-wire circuit. The amplifier stage (2) drives the output stage (5) which supplies the proportional 4 – 20mA DC current.

On probe break or short-circuit, a comparator (3) is activated, which switches the output signal over to Low level. Solder links and potentiometers (4) are used for the range settings.

The diode (6) serves as a reverse-polarity protection. The controller (7) provides the supply to the individual stages.

The 4 – 20 mA current signal is digitized in the A/D converter (8) and displayed as a temperature value on the LCD (9).

Accessories

Power supply units	to data sheet 70.7500 (1- or 4-way).
Temperature probe	On instruments with an external Pt100 resistance thermometer (Styles 20 and 23), temperature probes to data sheets 90.2105 and 90.2005 can be used.

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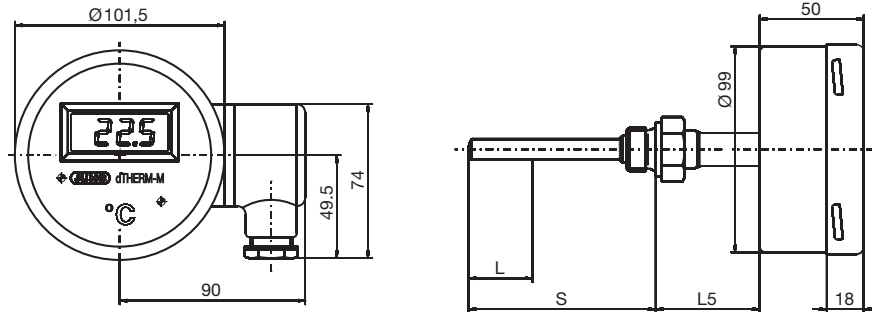
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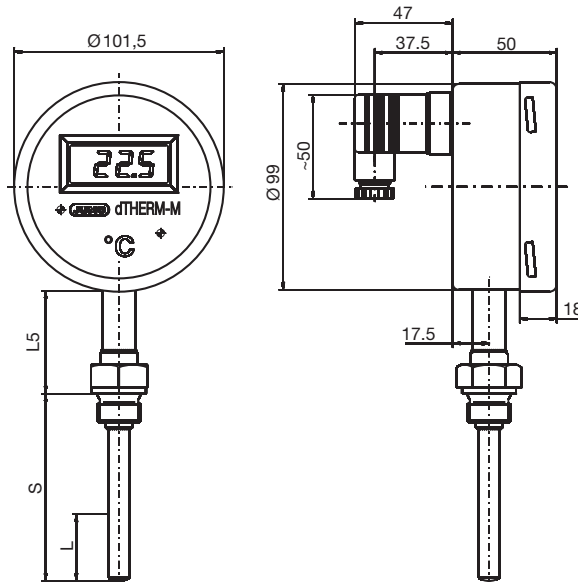


Dimensions

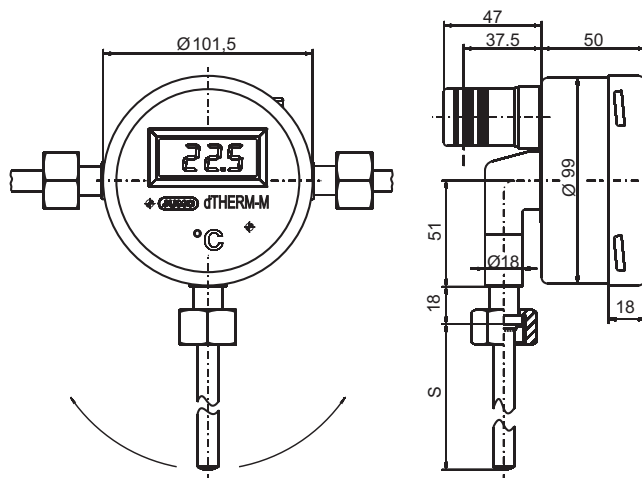
Type: 608624/0110



Type: 608624/1010



Type: 608624/1710



Probe mounting can be rotated through $\pm 90^\circ$

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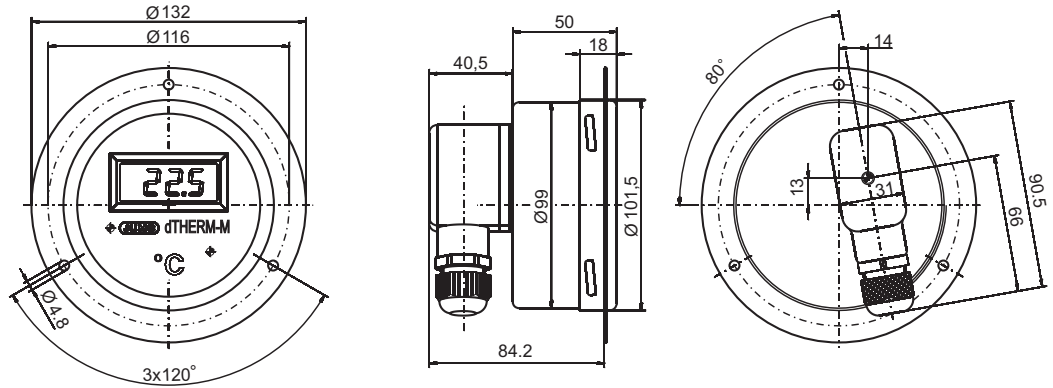
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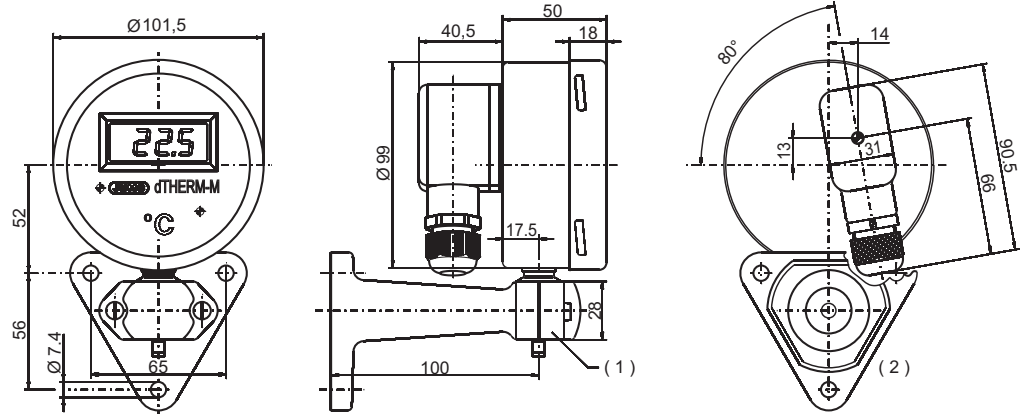


Dimensions

Type: 608624/2010



Type: 608624/2310



- (1) Spigot 26 mm dia.
- (2) Instrument mounting to DIN 16281

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Probe mountings TA

Version	Dimensional drawing	Description
010 TA01		Immersion tube with shoulder * Housing connection
844 TA02		Immersion tube with union nut and loose nipple; screw-in spigot ¹⁾
845 TA03		Immersion tube with loose union nut
841 TA04		Immersion tube with fixed hexagon screw-in spigot ¹⁾
847 TA06		Immersion tube with sliding clamping thread; screw-in spigot ¹⁾
842 TA20		Immersion tube with loose nipple and shoulder; screw-in spigot ¹⁾

¹⁾ Screw-in spigot to DIN 3852 Form A
²⁾ Housing connection not applicable on Style 17

Dimensions of process connection on Styles 01 and 10

Pipe thread G	a/f	L ₁	L ₂	L ₃	L ₅ TA01	L ₅ TA02	L ₅ TA03	L ₅ TA04	L ₅ TA06	L ₅ TA20
G ¹ / ₂ A	27	14	25	10	-	67	42	40.5	50.5	50
G ³ / ₄ A	32	16	29	11	-	71	42	40.5	50.5	50
Ø16 mm	-	-	-	-	32	-	-	-	-	-

Dimensions of process connection on Style 17

Pipe thread G	a/f	L ₁	L ₂	L ₃	L ₁₃ TA01	L ₁₃ TA02	L ₁₃ TA03	L ₁₃ TA04	L ₁₃ TA06	L ₁₃ TA20
G ¹ / ₂ A	27	14	25	10	-	43	18	18	50	-
G ³ / ₄ A	32	16	29	11	-	47	18	18	50	-
Ø 16 mm	-	-	-	-	18.5	-	-	-	-	-

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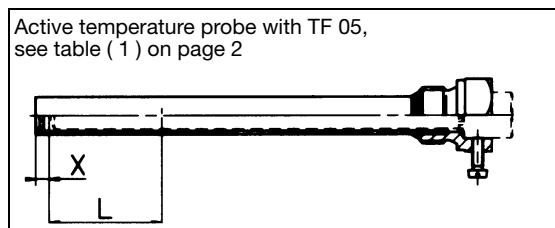
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Pockets (SH)

Pocket SH	Dimensional drawing	Description	Versions						Material			suitable for TA	
			Pipe thread G						CuZn ³	steel	stainless steel 1.4571		
			Ø D (SH)	Ø d (TF)	3/8"	1/2"	3/4"	1/2" NPT					
891 SH 05	X ~ 4 mm 	screw-in pocket assembled, screw-in spigot ¹	12	10		○	○		○				TA 03
			14	10	m	m				m	m		
	X ~ 4 mm 	screw-in pocket, assembled	14	10				m				m	
913 SH 07	X ~ 1 mm 	screw-in pocket, assembled, with fixing screw, screw-in spigot ¹	12	10	m	m	m			m			TA 01
			14	10	m	m	m			m	m		
	X ~ 1 mm 	screw-in pocket, assembled, with fixing screw	14	10				m			m	m	



Active temperature probe with TF 05, see table (1) on page 2

Other pockets and threads on request
 ○ available
¹ screw-in spigot to DIN 3852 Form A

Please specify dimension EL when ordering!

EL (standard lengths in mm)	50	63	80	100	150	200	300	1000 max.
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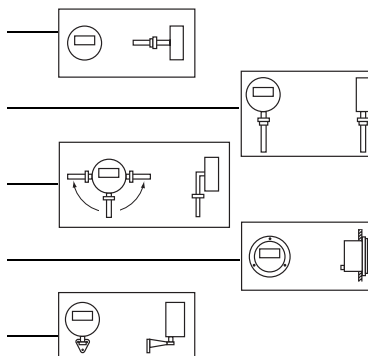
Order details

Digital indicator, Type 608624

Order code	(1) Basic type
608624	Digital indicator with integrated 2-wire transmitter

(2) Basic type extensions

0110	Style: 01; housing size: 100 mm dia.
1010	Style: 10; housing size: 100 mm dia.
1710	Style: 17; housing size: 100 mm dia.
2010	Style: 20; housing size: 100 mm dia.
2310	Style: 23; housing size: 100 mm dia.



(3) Range (MB)

357	-50 to + 50°C
814	0 to +100°C
818	0 to +120°C
826	0 to +160°C
832	0 to +200°C
380	-50 to +200°C
848	0 to +400°C
858	0 to +600°C

(4) Process connection (PA)¹

000	none (Styles 20 and 23)	
010	TA 01; immersion tube with shoulder	
844	TA 02; immersion tube with union nut and loose nipple ¹	
845	TA 03; immersion tube with loose union nut	
841	TA 04; immersion tube with fixed hexagon screw-in spigot ¹	
847	TA 06; immersion tube with sliding clamping thread ¹	
842	TA 20; immersion tube with loose nipple and shoulder ¹ (not for Style 17)	
891	SH 05; screw-in pocket, assembled ^{1, 2}	
913	SH 07; screw-in pocket, assembled, with clamping clip and fixing screw ^{1, 2}	

(5) Diameter of process connection (PA)¹

0	none (Styles 20 and 23)
6	6 mm dia. (only with TA 02 and TA 03)
10	10 mm dia.
14	14 mm dia. (only SH 05 and SH 07) ²

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Order details

Digital indicator, Type 608624

Order code

	(6) Thread for process connection (PA)¹
000	no thread (on TA 01, Style 20 and Style 23)
104	G ¹ / ₂ thread
105	G ³ / ₄ thread
	(7) Material of process connection (PA)¹
00	none (Style 20 and Style 23)
26	stainless steel (CrNi, 1.4571)
	(8) Fitting length of process connection (PA)¹ (dimension S)
0	none (Style 20 and Style 23)
50	50 mm
100	100 mm
150	150 mm
200	200 mm
...	special length (specify in plain text, in 50 mm steps)
	(9) Extra codes (TZ)
000	no extra code
465	display format 0.1 °C/digit (up to 160°C)
522	customized front panel

Special versions on request!

Order code

(1) 608624 / (2) [....] - (3) [...] - (4) [...] - (5) [...] - (6) [...] - (7) [...] - (8) [...] / (9) [...], ...

Order example

608624 / [1710] - [818] - [845] - [10] - [104] - [26] - [100] / [000]³

¹ Screw-in spigot to DIN 3852 Form A.

² See Data Sheet 60.8730 for description and features.

³ List extra codes in sequence, separated by commas.