



Introduction:

MDT-01 Digital Thermometer based on 24-bit A/D converters and 16-bit MCU, features high precision, high stability, low power consumption, multiple input types, multiple measurement results, easy operation, etc. When suitable sensors are matched, it can be widely used for handheld precise temperature measurement and Ω /mV/mA precise measurement in production, scientific research and labs. Its main characteristics are as follows

Input Types:

Pt100, Pt1000, Cu50, Cu100, K, S, E, T, J, R, B, N, as well as Ω , mV, and mA signals. There are three compensation modes for thermocouples, including internal compensation, external compensation and manual (simulated) compensation.

Display Resolution and Units

6 Digit, The highest resolution is 0.001°C (RTD-Resistance Temperature Detector) or 0.01°C (K/E/J/T/N thermocouple).

Units : Four display units for thermal resistances and thermocouples:
Switchable among Ω or mV, $^{\circ}\text{C}$, $^{\circ}\text{F}$ and K.

Customized start-up display: Including math modes, resolution, display units and the reference junction compensation modes.



Specifications

Type Code	Type	Effective Measurement Range	1-year tolerance Δ (see the notes)	Temperature Coefficient (0~18) \square and (28~40) \square
0	Pt100	(-100.000~+200.000) \square	± 0.060 \square	± 0.003 \square \square
1	Pt100	(-200.000~+850.000) \square	$\pm(0.02\%RDG + 0.060$ \square)	± 0.010 \square \square
2	Pt1000	(-140.000~+320.000) \square	$\pm(0.02\%RDG + 0.060$ \square)	± 0.003 \square \square
3	Cu50	(-50.000~+150.000) \square	± 0.080 \square	± 0.004 \square \square
4	Cu100	(-50.000~+150.000) \square	± 0.060 \square	± 0.008 \square \square
10	Ω	(0.000~2220.00) Ω	$\pm(0.02\%RDG + 50m\Omega)$	± 20 m Ω / \square
11	mV	(-100.000~+200.000)mV	$\pm(0.015\%RDG + 10\mu$ V)	$\pm 3\mu$ V/ \square
12	mA	(-2.000~+24.000) mA	$\pm(0.03\%RDG + 3\mu$ A)	$\pm 0.4\mu$ A/ \square
13	K	(-200.00~+1372.00) \square	(-100~-1372) \square :	± 0.50 \square \square
			(-200~-100) \square :	± 0.80 \square \square
14	S	(0.0~1768.0) \square	(200~1768) \square :	± 0.8 \square \square
			(0~200) \square :	± 1.2 \square \square
15	E	(-200.00~+1000.00) \square	(-100~+1000) \square :	± 0.40 \square \square
			(-200~-100) \square :	± 0.60 \square \square
16	T	(-200.00~+400.00) \square	(-100~+400) \square :	± 0.50 \square \square
			(-200~-100) \square :	± 0.60 \square \square
17	J	(-210.00~+1200.00) \square	(-100~+1200) \square :	± 0.50 \square \square
			(-210~-100) \square :	± 0.60 \square \square
18	R	(0.0~1768.0) \square	(200~1768) \square :	± 0.8 \square \square
			(0~200) \square :	± 1.2 \square \square
19	B	(300.0~+1820.0) \square	(600~+1820) \square :	± 0.9 \square \square
			(300~600) \square :	± 1.3 \square \square
20	N	(-200.00~+1300.00) \square	(-100~+1300) \square :	± 0.50 \square \square
			(-200~-100) \square :	± 0.90 \square \square

Resolution

Type Code	Type	Electric Quantity	Celsius Degree \square	Fahrenheit degree \square	Kelvin K
0	Pt100	1m Ω	0.001 \square	0.001 \square	0.001K
1	Pt100	1m Ω	0.001 \square	0.001 \square	0.001K
2	Pt1000	10m Ω	0.001 \square	0.001 \square	0.001K
3	Cu50	1m Ω	0.001 \square	0.001 \square	0.001 K
4	Cu100	1m Ω	0.001 \square	0.001 \square	0.001 K
10	Ω	<998.000 Ω :1m Ω \geq 998.00 Ω :10 m Ω			
11	mV	1 μ V	-----	-----	-----
12	mA	1 μ A	-----	-----	-----
13	K	1 μ V	0.01 \square	0.01 \square	0.01 K
14	S	1 μ V	0.1 \square	0.1 \square	0.1 K
15	E	1 μ V	0.01 \square	0.01 \square	0.01 K
16	T	1 μ V	0.01 \square	0.01 \square	0.01 K
17	J	1 μ V	0.01 \square	0.01 \square	0.01 K
18	R	1 μ V	0.1 \square	0.1 \square	0.1 K
19	B	1 μ V	0.1 \square	0.1 \square	0.1 K
20	N	1 μ V	0.01 \square	0.01 \square	0.01 K

Sample Rate

Input signals	S-rAtE=0	S-rAtE =1	S-rAtE =2
Thermocouple (INT/EXT Compensation)	3.3 times/s	6.6 times/s	12.1 times/s
Other input signals	3.5 times/s	7.0 times/s	13.2 times/s

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