

WE7241

10-CH, Digital Thermometer Module

Overview

The WE7241 multiplexes 10 channels of thermocouple or voltage inputs, enabling measurements with periods as short as 0.5 second. Its internal flash memory contains setup information required for module operations, such as ranges and measurement periods. Setup information set on this screen is transferred to the PC when the module is connected.

FEATURES

- Thermocouple measurement with reference junction compensating circuit
- 10-channel multiplexed input
- Isolation between channels

FUNCTIONS

- Synchronized operations between adjacent WE7241 modules
- 50/60 Hz noise is removed by a digital filter.

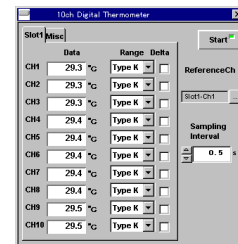
Performance Specifications

- Number of input channels: 10
- Input format: Floating unbalanced input(multiplexer format), isolation between channels and between the input and ground
- Measurement range/accuracy (ambient temperature 23 ±5°C, ambient humidity 50 ±10% RH, after the warmup time has passed)

DC Voltage Input Range	Setting Accuracy	Resolution
50 mV	±(0.07% of rdg + 40 μV)	10 μV
100 mV	±(0.06% of rdg + 60 μV)	10 μV
200 mV	±(0.06% of rdg + 80 μV)	10 μV
500 mV	±(0.06% of rdg + 200 μV)	100 μV
1 V	±(0.06% of rdg + 400 μV)	100 μV
2 V	±(0.06% of rdg + 600 μV)	100 μV
5 V	±(0.2% of rdg + 2 mV)	1 mV
10 V	±(0.2% of rdg + 3 mV)	1 mV
20 V	±(0.2% of rdg + 5 mV)	1 mV
50 V	±(0.2% of rdg + 20 mV)	10 mV

- Temperature coefficient(at 5 to 18°C or 28 to 40°C): ±70 ppm/°C of rdg at 50 mV to 2 V range, ±80 ppm of rdg)/°C at 5 V to 50 V range

Thermocouple Input			
Type	Accuracy Guaranteed Measurement Range	Accuracy	Resolution
K	-200.0 to 1300.0°C	±(0.1% of rdg + 1°C), except -200°C to 0°C: ±(0.6% of rdg + 1°C)	0.1°C
E	-200.0 to 800.0°C	±(0.05% of rdg + 1°C), except -200°C to 0°C: ±(0.3% of rdg + 1°C)	0.1°C
J	-200.0 to 1100.0°C	±(0.1% of rdg + 1°C), except -200°C to 0°C: ±(0.4% of rdg + 1°C)	0.1°C
T	-200.0 to 400.0°C	±(0.01% of rdg + 1°C), except -200°C to 0°C: ±(0.4% of rdg + 1°C)	0.1°C



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L	-200.0 to 900.0°C	±(0.1% of rdg + 1°C), except -200°C to 0°C: ±(0.3% of rdg + 1°C)	0.1°C
U	-200.0 to 400.0°C	±(0.1% of rdg + 1.5°C), except -200°C to 0°C: ±(0.5% of rdg + 1.5°C)	0.1°C
N	-200.0 to 1300.0°C	±(0.05% of rdg + 1.5°C), except -200°C to 0°C: ±(1% of rdg + 1.5°C)	0.1°C
R	-50.0 to 1700.0°C	±(0.1% of rdg + 3°C), except -50°C to 200°C: ±8°C, 200°C to 800°C: ±4°C	0.1°C
S	-50.0 to 1700.0°C	±(0.1% of rdg + 3°C), except -50°C to 200°C: ±8°C, 200°C to 800°C: ±4°C	0.1°C
B	400.0 to 1800.0°C	±(0.1% of rdg + 4°C), except 400°C to 700°C: ±7°C	0.1°C
W	0.0 to 2300.0°C	±(0.2% of rdg + 3°C), except 400°C to 700°C: ±7°C	0.1°C
KPvsAu7Fe	0 to 23K: ±(2.5K), 0.0 to 278.0K	23K to 278K: ±(0.5K)	0.1K

- Temperature coefficient (at 5 to 18°C or 28 to 40°C): ±(200 ppm of rdg)/°C
- K, E, J, T, N, R, S, B: JIS C1602-1995
- L, U: DIN 43710
- W: ASTM 988-84
- KPvsAu7Fe: ASTM SPT430
- Reference Junction Compensation Accuracy (using 707821, when the temperature of the input terminal is balanced, excluding noise components)
 - When measuring above 0°C: ±1°C, when measuring below 0°C: ±1.5°C
 - No guarantees on accuracy during KPvsAu7Fe measurement
 - For Type-W when measuring up to 200°C: ±1°C, when measuring above 200°C ±1.5°C
 - No reference junction compensation for Type-B
- Input coupling method: DC
- Input resistance: 1 MΩ or more
- Maximum source resistance: 1 kΩ or less
- Normal mode rejection ratio (when the frequency is 50/60 Hz ±0.1 Hz): 50 dB or more
- Common mode rejection ratio (when the frequency is 50/60 Hz ±0.1 Hz): 120 dB or more (when using the guard)

- A/D resolution: Equivalent to 14 bits (when applying DC voltage)
- Time base: Module's internal clock, or the time base (CMNCLK) signal of the measuring station
- Sampling interval
 - When using the internal time base: 0.5 s to 60 s
 - When using the time base (CMNCLK) signal of the measuring station: 2.0 s or longer
- Connector type: DIN connector (96-pin, male)

General Specifications

- Safety standard: Conforms to CSA C22.2 No. 1010.1 and EN61010-1, conforms to JIS C1004
- Warm-up time: At least 30 minutes
- Operating conditions: Same as those of the measuring station
- Storage conditions
 - Temperature: -20 to 60°C
 - Humidity: 20 to 80% RH (no condensation)
- Maximum allowable input voltage: 30 VACrms, 42.4 Vpeak or ±60 VDC (Overvoltage Category: CAT I and II)
- Maximum common mode voltage: 150 Vrms or ±150 VDC between the L terminal and ground
- Maximum noise between channels: 60 VACrms, 84.8 Vpeak or ±100 VDC
- Insulation withstand voltage
 - Between input terminals: 60 Hz 1000 VACrms for one minute
 - Between input terminal and ground: 60 Hz 1500 VACrms for one minute
- Insulation resistance
 - Between input terminal and ground, between input terminals: 500 VDC, 10 MΩ or more
- Power consumption: 7 VA (typical value (see Note) at 100 V/50 Hz)
- Weight: About 0.8 (1.76) kg (lb)
- External dimensions: About 33{1.30} (W) × 243{9.57} (H) × 232{9.13} (D) mm{inch} (projections excluded)
- Number of used slots: 1
- Standard accessory: User's Manual (1)
- Optional accessory
 - 707821 Input terminal block

Note: Typical value represents a typical or average value. It is not strictly guaranteed.

AVAILABLE MODEL

Model	Description
707241/HE	10-CH, digital thermometer module

Special Accessory (sold separately)

Accessory	Model	Specifications	Order quantity
Input terminal block	707821	Temperature and voltage measurement	1

DIMENSIONS

Unit: mm (inch)

