NTM2 Series
Temperature Transmit Module

Nanjing New Power Electric Co., Ltd.

➔ Introductions

This temperature transmit module deliver the field thermocouple or thermal resistance signals by digital linearizaton, convert to 4 ~ 20 mA current signals.

➔ Parameters

Explosive-proof grade: Ex ia IIC T4/T6 Ga

T4: −40 ℃ ~ +60 ℃

T6: −40 ℃ ~ +50 ℃

Power supply:

Rated voltage: 12 V DC ~ 28 V DC (loop powered)

Input:

TC: K, E, S, B, J, T, R, N, WRe3 - WRe25, WRe5 - WRe26

2/3/4-wire RTD: Pt100, Cu100, Cu50, BA1, BA2

The input signal needs to be determined when ordering and can also be programmed.

Output: 4 ~ 20 mA

Load resistance:

$R_L \leq [(U-12)/0.022]\ \Omega$ U: Loop power supply

Transmission characteristics (25 ℃ ± 2 ℃):

Input	Range	Accuracy
K/E/J/N/T	< 300 ℃	± 0.3 ℃
	≥ 300 ℃	± 0.1% F.S.
S/B/R/WRe-series	< 500 ℃	± 0.5 ℃
	≥ 500 ℃	± 0.1 % F.S.
Pt100/Cu100 Cu50/BA1/BA2	< 100 ℃	± 0.1 ℃
	≥ 100 ℃	± 0.1 % F.S.

Response time: ≤ 1 s

Temperature drift: 50 ppm/℃

Cold junction compensation accuracy: ± 1 ℃ (Preheated for 10 minutes)

Cold junction compensation range: -40 ℃ ~ +85 ℃

Electromagnetic compatibility: Accordance to IEC 61326-3-1

Dielectric strength (1 mA leakage current, 1 minute test time):

≥ 1500 V AC (Input /Output)

Insulation resistance: ≥ 100 MΩ (Input /Output)

Ambient conditions:

Operation temperature: −40 ℃ ~ +85 ℃

Relative humidity: 10% RH ~ 90% RH (40 ℃)

Atmosphere pressure: 80 kPa ~ 106 kPa

Storage temperature: −40 ℃ ~ +85 ℃

Parameters certified by National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI):

Terminals 3, 4, 5, 6:

U_o: 5.9 V; I_o: 24 mA; P_o: 36 mW; C_o: 40 μF; Lo: 40 mH

Terminals 1, 2:

U_i: 28 V; I_i: 93 mA; P_i: 670 mW; C_i: 0 μF; L_i: 0 mH

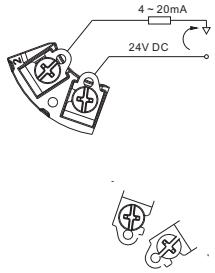
➔ Model rules

NTM2 [X] 0. Ex

The input signal [note]

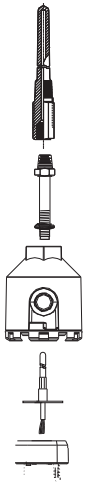
Number	Input signal
0	Thermocouple or thermal resistance
1	Thermocouple
2	Thermal resistance

➔ Wiring diagram



- Terminals 5 and 6 must be shorted when 2-wire RTD inputs.
- 3-wire input, wire resistance should be as same as possible, otherwise it will increase the error of measurement.
- TC input, the compensating wire should be connected directly to the input terminals of the temperature transmit module.

❍ Maximum torque of the M3-screw 0.5 N.m.



❍ Wire size 0.2 mm^2 ~ 2.5mm^2.

➔ configuration

There are two ways to programming or calibration to choose for this product:

1. About The Site Handheld Programmer: Chinese menu, large liquid-crystal screen make the function programming more completed and the measurements calibrating more convenient, having a friendly human-machine interface.

2. Figuration software: Matching with special protocol converter make it more flexible. Besides, it is relatively more affordable.

3. For this product uses the special structure of the digital and take the ambient temperature compensation, zero auto-calibration and other advanced technology, it can ensure the accuracy within prescribed limits all the year round, without frequent calibration.

❍ The devices were designed for use in pollution degree 2 and overvoltage category III as per IEC/EN 60664-1. If used in areas with higher pollution degree, the devices need to be protected accordingly.

❍ Installation position shall not be affected by strong mechanical vibration; impact and electromagnetic induction from signal terminal and power supply, should conformity with the requirements on electromagnetic interference resistance of products in Class 3 industrial field atmosphere stipulated in IEC 61000-4; the atmosphere shall be free from gases that are corrosive to metal and plastic components.

❍ The apparatus must be installed, connected and adjusted by qualified personnel in non-hazardous area according with the instruction manual.

❍ The operator must strictly comply with the relevant local safety standards and guidelines.

➔ Supplementary instructions

❍ Our company reserves the right to change the product information without prior notification to the user. If the contents of the description are different from website or sample, this description shall prevail.