HART Protocol Cylindrical Temperature Transmitters

CN-502H Series

CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- HART protocol
- Multi-input
  - RTD 8 types
  - Thermocouple 7 types
  - mV 4 types
  - Resistor 2 types
- Small size: Ø44×24H
- High accuracy: ± 0.3 % F.S.

Specifications

Model	CN-502H
Power supply	11-35 VDC⎓
Power consumption	≤ 1 W
Display method[01]	No mark
Measurable current	50 μA (3-wire), 100 μA (4-wire)
Resistance	≤ 5 Ω
Input specification	Refer to 'Input Specifications'
Input accuracy	± 0.1 % F.S.
Output	DC 4-20 mA (2-wire)
Output accuracy	±0.1 % F.S.
Response time	1 sec (10 to 90 % of output)
Load	≤ (Power supply-11 VDC⎓) / 0.023 A
Setting method	HART-protocol (no setting key)
Alarm	≤ 3.8 mA, ≥ 21.0 mA, sensor break 22 mA or 3.6 mA
Sampling period	500 ms
Unit weight (Packaged)	≈ 26 g (≈ 66 g)

01) Parameter setting and state monitoring are available through an external device such as HART communicator or loader.

Dielectric strength	1000 VAC~ 50/60 Hz 1 min (between all terminals and case)
Noise immunity	IEC 61326-1
Vibration	0.75 mm amplitude a frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Insulation resistance	≥ 100 MΩ (500VDC⎓ megger)
Memory protection	≈ 10 years (when using non-volatile semiconductor memory)
Tightening torque	Housing: 1 N m, Terminal: 0.9 N m
Galvanic insulation	1 kVAC~ (Input/Output)
Ambient temperature	-40 to 85 °C, Storage: -40 to 85 °C (rated at no freezing or condensation)
Ambient humidity	5 to 95 %RH, Storage: 5 to 95 %RH (rated at no freezing or condensation)
Protection structure	Housing: IP40 (IEC standard), Terminal: IP00 (IEC standard)
Material	Case: PC
Approval	CE HART

Environmental Influence

- This is based on the state of 24 VDC⎓ power supply, 250 Ω load, 25 °C ambient temperature and 10 min warming up time.

CJC error	± 1 °C
Temperature influence	Input error (TC), Input error (RTD), Output error
Input error (TC)	0.015 % F.S. / 1 °C (1.8 °F)
Input error (RTD)	0.015 % F.S. / 1 °C (1.8 °F)
Output error	0.1 % F.S. / 10 °C (18 °F)
Power supply voltage fluctuations	0.002 % F.S. / V
Load fluctuations	0.002 % F.S. / 100 Ω

Input Specifications

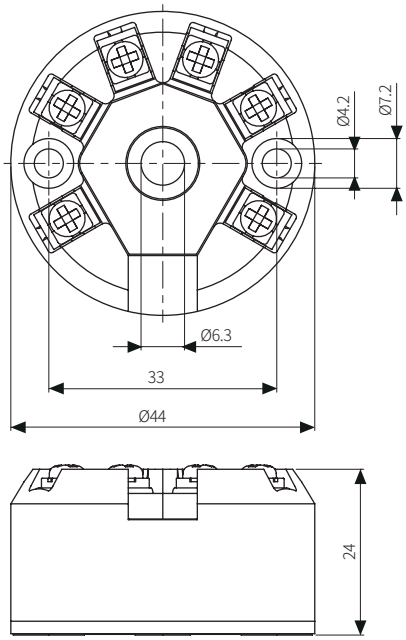
- Input accuracy excluded range
  Thermocouple: K (≤ -190 °C), T (≤ -200 °C), S, B, R (≤ 400 °C)

Input type		Input range (°C)	Input range (°F)	Min. span (°C)
Thermocouple	K (NiCr-Ni)	-270 to 1372	-454 to 2501.6	50
	J (Fe-CuNi)	-210 to 1200	-346 to 2192	
	E (NiCr-CuNi)	-270 to 1000	-454 to 1832	
	T (Cu-CuNi)	-270 to 400	-454 to 752	
	N (NiCrSi-NiSi)	-270 to 1300	-454 to 2372	
	B (PtRh30-PtRh6)	0 to 1820	32 to 3308	500
	R (PtRh13-Pt)	-50 to 1768	-58 to 3214.4	
	S (PtRh10-Pt)	-50 to 1768	-58 to 3214.4	
RTD	DPt100 Ω	-200 to 850	-328 to 1562	10
	DPt500 Ω	-200 to 250	-328 to 482	
	DPt1000 Ω	-200 to 250	-328 to 482	
	Ni100 Ω	-60 to 180	-76 to 356	
	Ni500 Ω	-60 to 180	-76 to 356	
	Ni1000 Ω	-60 to 150	-76 to 302	
	JPt100 Ω	-200 to 600	-328 to 1112	
Resistance transmitter	Resistance (Ω)	0 to 400 Ω	-	10 Ω
		0 to 2000 Ω		
Analog	Voltage	-10 - 75 mV	-	5 mV
		-100 - 100 mV		
		-100 - 500 mV		10 mV
		-100 - 2000 mV		20 mV

CE HART FIELD COMMUNICATIONS PROTOCOL

Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.



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