

General Specifications

YTA70 Temperature Transmitter



GS 01C50C03-00EN

The YTA70 is a head mount type of temperature transmitter that accepts thermocouple, RTD, ohms or DC millivolts input and converts it to a 4 to 20 mA DC signal for transmission. The YTA70 conforms to the standard DIN form B head mounting. The YTA70 supports HART® communication protocol.



STANDARD SPECIFICATIONS

Accuracy

See Table 1. on page 2.

Cold Junction Compensation Accuracy

(For T/C only)

$\pm 1^{\circ}\text{C}$ ($\pm 1.8^{\circ}\text{F}$)

Ambient Temperature Effects

See Table 1. on page 2.

Power Supply Effects

$\pm 0.005\%$ of FS per Volt

RFI Effects

Tested per EN 50 082-2, field intensity up to 10 V/m.

EMC Conformity

EN61326

Input Type, Span and Range

Selection from thermocouples (T/C), 2-, 3-, and 4-wire RTDs, ohms and DC millivolts. See Table 1 on page 2.

Maximum Zero offset

$\pm 50\%$ of selected maximum value

Input Resistance (for thermocouples, mV)

10 M Ω , or 3 k Ω at power-off

Input Lead Wire Resistance (for RTD, ohm)

5 Ω per wire or lower

Sensor Burnout

High or Low

Output

Two wire 4 to 20 mA DC

Response Time

1 to 60 seconds programmable

Ambient Temperature Limits

(Option code may affect limit)

-40 to 85°C (-40 to 185°F)

Ambient humidity limits

5 to 90% RH at 40°C (104°F)

Isolation

Input/output isolated to 1500 V AC.

Supply & Load Requirements:

Voltage

8 to 35 V DC for operation

(8 to 30 V DC for Intrinsically safe type)

13.8 to 35 V DC for digital communication

Load Resistance

0 to $(E-8)/0.023$ [Ω]

where E is power supply voltage.

250 to 600 Ω for digital communication

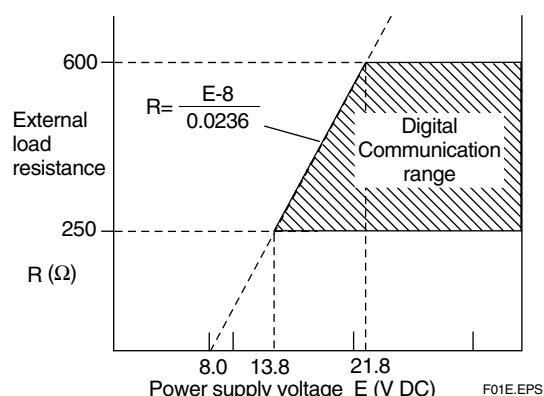


Figure 1. Relationship Between Power Supply Voltage and External Load Resistance

Enclosure:

Material

Polycarbonate

Color of the case

Red

Mounting

DIN form B head mounting

Terminals

M3 screws

Weight

50 g (0.11 lb)

Table 1. Input type, range and accuracy

Sensor type	Standard	Input ranges		Minimum span		Accuracy (value whichever is greater)	Temp. effects/10°C (value whichever is greater)
		°C	°F	°C	°F		
<T/C>							
B	IEC584	400 to 1820	752 to 3308	200	360	± 0.1% of span or ±1.0°C	± 0.05% of span or ±1.0°C
E		-100 to 1000	-148 to 1832	50	90	± 0.1% of span or ±0.5°C	± 0.05% of span or ±0.25°C
J		-100 to 1200	-148 to 2192	50	90		
K		-180 to 1372	-292 to 2502	50	90		
N		-180 to 1300	-292 to 2372	100	180	± 0.1% of span or ± 1.0°C	± 0.05% of span or ±1.0°C
R		-50 to 1760	-58 to 3200	200	360		
S		-50 to 1760	-58 to 3200	200	360		
T	DIN43710	-200 to 400	-328 to 752	50	90	± 0.1% of span or ± 0.5°C	± 0.05% of span or ±0.25°C
L		-100 to 900	-148 to 1652	50	90		
U		-200 to 600	-328 to 1112	75	135		
W3	ASTM	0 to 2300	32 to 4172	200	360	± 0.1% of span or ± 1.0°C	± 0.05% of span or ±1.0°C
W5	E988-90	0 to 2300	32 to 4172	200	360		
<RTD>							
Pt100	IEC751	-200 to 850	-328 to 1562	10	18	± 0.1% of span or ± 0.1°C	± 0.05% of span or ±0.05°C
Ni100	DIN43760	-60 to 250	-76 to 482	10	18	± 0.1% of span or ± 0.2°C	
DC Voltage [mV]		-800 to 800 [mV]		2.5 [mV]		± 0.1% of span or ± 0.01mV	± 0.05% of span or ± 5μV
Resistance [Ω]		0 to 7000 [Ω]		25 [Ω]		± 0.1% of span or ± 0.1Ω	± 0.05% of span or ± 0.05Ω

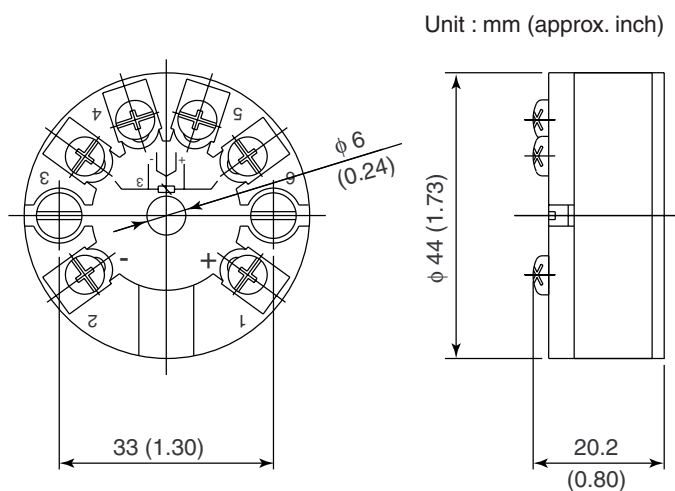
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■ MODEL AND SUFFIX CODES

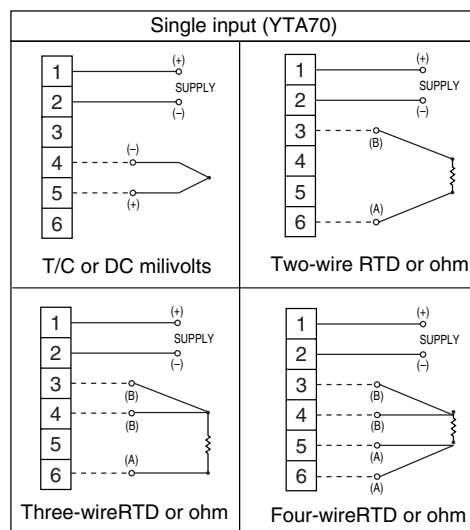
Model	Suffix code	Descriptions
YTA70		Temperature Transmitter (Head Mount Type)
Output Signal	- E	4 to 20mA DC with digital communication (HART protocol)
Optional Specifications	/ KS2	CENELEC ATEX (KEMA) intrinsically safe approval Applicable standard: EN 60079-0: 2006, EN 60079-11: 2007, EN 60079-26: 2007, EN 61241-0: 2006, EN 61241-11: 2006 Certificate: KEMA 10 ATEX0027 II1G Ex ia IIC T4 or T6, II1D Ex iaD Amb. temp. for gas-proof T4: -40 to 85°C (-40 to 185°F), T6: -40 to 60°C (-40 to 140°F) Surface temp. for dust-proof: T4: T105°C amb. temp. -40 to 85°C (-40 to 185°F) T6: T85°C amb. temp. -40 to 60°C (-40 to 140°F) Supply/output circuit: Ui=30V, Ii=120mA, Pi=0.84W, Ci=1nF, Li=10 μH Sensor circuit: Uo=9.6V, Io=28mA, Po=67mW, Co=3.5μF, Lo=35mH
	/ DS2	FM intrinsically safe/Nonincendive and CENELEC ATEX (KEMA) intrinsically safe approval combination (For CENELEC ATEX Intrinsically safe approval, see /KS2) [FM Intrinsically safe/Nonincendive approval] Applicable standard: FM 3600, FM 3610, FM 3611, FM 3810 Intrinsically safe for Class I, Division 1, Groups A, B, C and D Supply: Vmax=28V, Imax=120mA, Pmax=0.84W, Ci≤1nF, Li≤10μH Nonincendive for Class I, Division 2, Groups A, B, C, D Hazardous (Classified) indoor/outdoor (TYPE 4) Locations Supply: Vmax=35V, Imax=150mA, Ci=0μF, Li=10μH Amb. temp.: T6 Ta=55°C, T4 Ta=80°C
	/ SS2	IECEx intrinsically safe, FM intrinsically safe/Nonincendive, and CENELEC ATEX (KEMA) intrinsically safe approval combination (For FM and CENELEC ATEX intrinsically safe approval, see /KS2 and /DS2.) [IECEx intrinsically safe approval] Applicable standard: IEC 60079-0:2007-10, IEC 60079-11:2006, IEC 60079-26:2006, IEC 61241-11:2005 Certificate: IECEx KEM 10.0086 Ex ia IIC T4...T6 Ga, Ex ia IIIC T135°C...T80°C Da Amb. temp.: -40 to 85°C (-40 to 185°F) for T4, -40 to 45°C (-40 to 113°F) for T6 Supply/output circuit: Ui=30V, Ii=120mA, Pi=0.84W, Ci=1nF, Li=10 μH Sensor circuit: Uo=9.6V, Io=28mA, Po=67mW, Co=3.5μF, Lo=35mH

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DIMENSIONS



● Sensor Connections



< Ordering Information >

Specify Model, suffix, and optional specification codes when ordering. If necessary, also specify the followings;

1. Sensor type. For RTD and ohm input, specify the number of wire together.
2. Calibration range and unit.
3. Sensor Burnout : High or Low
4. Response time : An integral number from 1 to 60.

Model YTA70 will be shipped with the following settings from the factory if not specified upon ordering ;

Sensor type : Pt100, 3-wire
 Range : 0 to 100 °C
 Sensor Burnout : High
 Response time : 1 sec