

# General Specifications

Model YTA70  
Temperature Transmitter

YTA SERIES

GS 01C50C03-00E

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)

± 1°C (± 1.8°F)

### Ambient Temperature Effects

See Table 1. on page 2.

### Power Supply Effects

± 0.005% of FS per Volt

### RFI Effects

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

### EMC Conformity $\text{CE}$

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

±50% of selected maximum value

### Input Resistance (for thermocouples, mV)

10 MΩ, or 3 kΩ 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 28V DC for Intrinsically safe type)  
13.8 to 35 V DC for digital communication

#### Load Resistance

0 to  $(E-8)/0.0236$  [Ω]  
where E is power supply voltage.  
250 to 600 Ω for digital communication

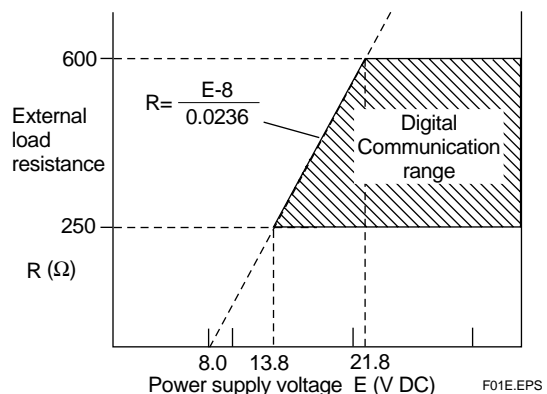


Figure 1. Relationship Between Power Supply Voltage and External Load Resistance

### 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		
J		-100 to 1200	-148 to 2192	50	90	± 0.1% of span or ±0.5°C	± 0.05% of span or ±0.25°C
K		-180 to 1372	-292 to 2502	50	90		
N		-180 to 1300	-292 to 2372	100	180		
R		-50 to 1760	-58 to 3200	200	360	± 0.1% of span or ± 1.0°C	± 0.05% of span or ±1.0°C
S		-50 to 1760	-58 to 3200	200	360		
T	-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	DIN43710	-100 to 900	-148 to 1652	50			90
U		-200 to 600	-328 to 1112	75	135	± 0.1% of span or ± 1.0°C	± 0.05% of span or ±1.0°C
W3	ASTM	0 to 2300	32 to 4172	200	360		
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		
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

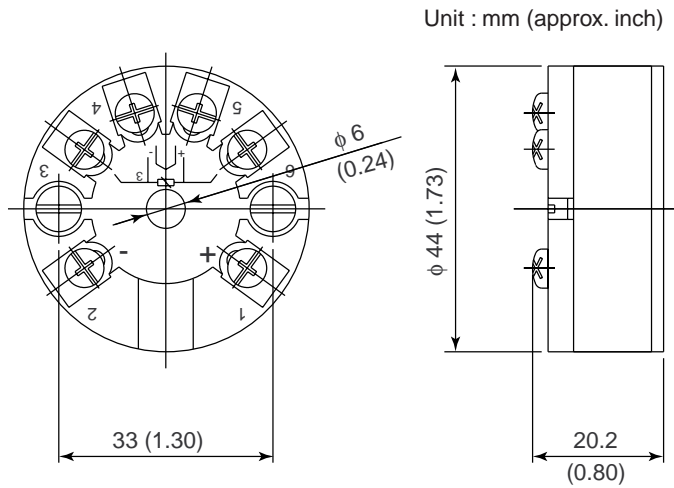
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## ■ MODEL AND SUFFIX CODES

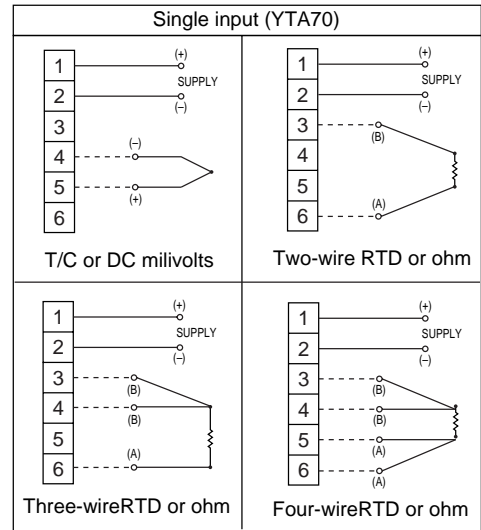
Model	Suffix code	Descriptions
YTA70	.....	Temperature Transmitter (Head Mount Type)
Output Signal	- E .....	4 to 20mA DC with digital communication (HART protocol)
Optional Specifications	/ KS2	CENELEC ATEX intrinsically safe approval Applicable standard: EN 50014, EN 50020, EN 50284 Certificate: DEMKO 01 ATEX 130870 Amb. Temp. T4 : -40 to 85°C (-40 to 185°F) T6 : -40 to 60°C (-40 to 140°F) Supply : Ui=28V, Ii=120mA, Pi=0.84W, Ci≤1nF, Li≤10µH
	/ DS2	FM intrinsically safe and CENELEC ATEX intrinsically safe approval combination (For CENELEC ATEX Intrinsically safe approval, see /KS2) [FM Intrinsically safe approval] Applicable standard: FM 3600, FM 3610, FM 3611, FM 3810 Class I Division 1 Groups A, B, C and D Ambient Temperature : -40 to 60°C (-40 to 140°F) Supply : Vmax=28V, Imax=120mA, Pmax=0.84W, Ci≤1nF, Li≤10µH

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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