

# General Specifications

## YTA50 Temperature Transmitter



GS 01C50C01-00EN

The YTA50 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 YTA50 conforms to the standard DIN form B head mounting.



### ■ 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

#### EMC Conformity

EN61326-1 Class A, Table 2  
EN61326-2-3

#### EU RoHS Directive

Applicable standard: EN IEC 63000

#### Input Type, Span and Range

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

#### Maximum Zero offset

±50% of the maximum temperature

#### Input Signal Source Resistance (For T/Cs input)

10 MΩ, or 3 kΩ at power-off

#### Input Lead Wire Resistance (For RTDs input)

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 affects limit)  
-40 to 85°C (-40 to 185°F)

#### Ambient humidity limits

5 to 90% RH at 40°C (104°F)

#### Supply Voltage

7 to 35 V DC  
7 to 30 V DC for Intrinsically safe type

#### Load Resistance

Limitation: 0 to (E-7)/0.023 [Ω]  
where E is power supply voltage.  
Typical; 739Ω @ 24 V DC

#### Isolation

Input/output isolated to 1500 V AC.

#### 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 range		Minimum Span		Accuracy (value whichever is greater)	Temp. effects/10°C (value whichever is greater)
		°C	°F	°C	°F		
<T/Cs>							
B	IEC60584	400 to 1820	752 to 3308	200	360	±0.1% of span or ±2.0°C	±0.1% of span or ±2.0°C
E		-100 to 1000	-148 to 1832	50	90		
J		-100 to 1200	-148 to 2192	50	90	±0.1% of span or ±1.0°C	±0.1% of span or ±0.5°C
K		-180 to 1372	-292 to 2502	50	90		
N		-180 to 1300	-292 to 2372	100	180	±0.1% of span or ±2.0°C	±0.1% of span or ±2.0°C
R		-50 to 1760	-58 to 3200	200	360		
S		-50 to 1760	-58 to 3200	200	360		
T		-200 to 400	-328 to 752	50	90		
L	DIN43710	-100 to 900	-148 to 1652	50	90	±0.1% of span or ±1.0°C	±0.1% of span or ±0.5°C
U		-200 to 600	-328 to 1112	75	135		
W3	ASTM	0 to 2300	32 to 4172	200	360	±0.1% of span or ±2.0°C	±0.1% of span or ±2.0°C
W5	E988-90	0 to 2300	32 to 4172	200	360		
<RTDs>							
Pt100	IEC60751	-200 to 850	-328 to 1562	10	18	±0.1% of span or ±0.2°C	±0.1% of span or ±0.1°C
Ni100	DIN43760	-60 to 250	-76 to 482	10	18	±0.1% of span or ±0.2°C	
DC Voltage [mV]		-10 to 800 [mV]		5 [mV]		±0.1% of span or ±0.01mV	±0.1% of span or ±10µV
Resistance [Ω]		0 to 5000 [Ω]		30 [Ω]		±0.1% of span or ±0.1Ω	±0.1% of span or ±0.1Ω

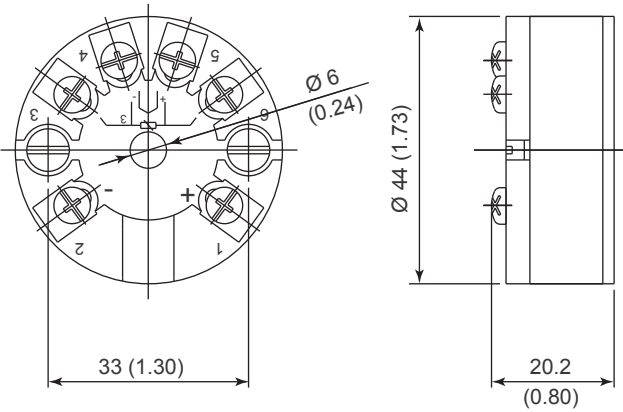
**MODEL AND SUFFIX CODES**

Model	Suffix Codes	Descriptions														
<b>YTA50</b>	.....	Temperature Transmitter (Head Mount Type)														
Output Signal	<b>-A</b> .....	4 to 20mA DC														
Optional Specifications	<b>/KS2<sup>1</sup></b>	<p>ATEX Intrinsically safe approval                      Applicable standard: EN IEC 60079-0, EN 60079-11                      Certificate: KEMA 06 ATEX0191 X                      II 1 G Ex ia IIC T6...T4 Ga                      II 2 D Ex ia IIIC Db                      Amb. temp.:                      For EPL Ga:                      The relation between ambient temperature range and temperature class:</p> <table border="1"> <thead> <tr> <th rowspan="2">Temperature Class</th> <th>Pi= 0.84W</th> <th>Pi= 0.75W</th> </tr> <tr> <th>Ambient temperature range</th> <th>Ambient temperature range</th> </tr> </thead> <tbody> <tr> <td>T6</td> <td>-40°C to +47°C</td> <td>-40°C to +50°C</td> </tr> <tr> <td>T5</td> <td>-40°C to +62°C</td> <td>-40°C to +65°C</td> </tr> <tr> <td>T4</td> <td>-40°C to +85°C</td> <td>-40°C to +85°C</td> </tr> </tbody> </table> <p>For EPL Db:                      The surface temperature of the outer enclosure is + 20 K above the ambient temperature, determined without a dust layer.                      Ambient temperature range: -40 to 85°C                      Supply/output circuit: Ui=30V, Ii=120mA, Pi=0.84W or 0.75W, Ci=1nF, Li=10µH                      Sensor circuit: Uo=9.6V, Io=25mA, Po=60mW, Co=2.4µF, Lo=33mH</p>	Temperature Class	Pi= 0.84W	Pi= 0.75W	Ambient temperature range	Ambient temperature range	T6	-40°C to +47°C	-40°C to +50°C	T5	-40°C to +62°C	-40°C to +65°C	T4	-40°C to +85°C	-40°C to +85°C
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	<b>/DS2<sup>1</sup></b>	<p>FM intrinsically safe/Nonincendive and ATEX intrinsically safe approval combination                      (For 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</p>														

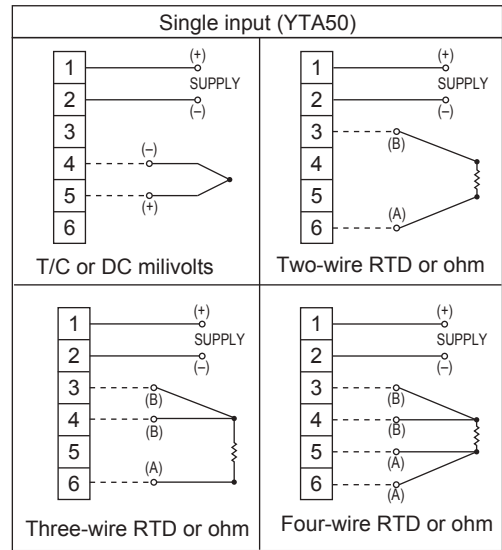
\*1: Even if the option code is the same, the explosion-proof specifications (Ex marking, Amb.temp., etc.) are different, so please check the specifications when ordering.

■ DIMENSIONS

Unit : mm (approx. inch)



● Sensor Connections



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< Ordering Information >

Specify the following when ordering.

1. Model, suffix codes, and optional specification codes
2. Sensor type. For RTD input, specify the number of wire together. For example; Pt100, 4-wire
3. Calibration range. Specify upper and lower range value, so as to make the span wider than the minimum span limit.
4. Sensor burnout. Specify high or low.
5. Response time. Specify an integral number from 1 through 60. ("1" is recommended .)