

## Temperature Transmitters

# YTA SERIES

With high resolution, high stability and high versatility, the YTA series raises the standard for temperature transmitters in the new millenium. This broad range of transmitters not only brings you new heights in performance, but in cost-savings and ease of operation, too.



Distribué par :

# Welcome to the new era of temperature measurement.

## A new era in transmitter performance.

At Yokogawa, we're seeing outstanding results with digital solutions like the DPharp series of pressure transmitters. In fact, we've created a whole new standard for transmitter performance. And now, we're applying this standard to the measurement you use most: temperature.

## As digital as it gets.

The YTA Series of temperature transmitters combines the digital accuracy of our DPharp pressure transmitters with the reliability of our YT temperature transmitters. The result is a temperature transmitter with unprecedented resolution (for superior A/D and D/A conversion) Plus, exceptional repeatability. And, outstanding reliability.

## Just as important, these transmitters are designed to be a lot easier on you.

That means easier to install, configure and operate. The universal input keeps inventory costs low. And, the wide range of options means you can specify a YTA series transmitter to suit virtually any application. Our YTA 320 transmitters even feature dual sensors to enable automatic sensor back-up and differential temperature measurements.

## Nothing like it.

There really is nothing quite like the new YTA series. But, then, there's no one else in the business like Yokogawa. We've been a leader in process control since the 1950's. And, we're extending that lead even further with the YTA50, 70, 110, 310 and 320 temperature transmitters.

## A Digital Family.

The Yokogawa solution ranges from control systems such as our CENTUM® CS Series ... to our DPharp series of pressure transmitters. Together with the YTA series, they're designed to provide a complete family of solutions for the emerging, digital fieldbus era.

DUAL INPUT  
FAILED SENSOR BACKUP  
DIFFERENTIAL TEMPERATURE

20 INPUT  
TYPES

AVERAGE  
TEMPERATURE

DIGITAL

COMMUNICATIONS  
MULTIVARIATE



Shown: YTA 320 with dual input head

# What do you have when you have the YTA series?

This is one transmitter that's easy to get your hands on — with excellent access and simple wiring for your output and sensor connections.

- **Exceptional accuracy and error reduction**

The resolution of the YTA series is unmatched. For example, the YTA 310 and YTA 320 feature best-in-industry D/A accuracy at 0.02% of span. Their sensor matching capabilities can reduce total measurement error by up to 75%. And, they offer the greatest long term stability of any temperature transmitter. The dual sensor capabilities of the YTA320 enable you to reduce errors even further through sensor backup and differential temperature measurement.

- **Less inventory costs and more versatility**

A wide variety of selectable inputs means that you can keep your inventory costs down. The YTA Series supports all the common sensor inputs including thermocouple, RTD and millivolt.

- **Quicker, easier installation**

Take a closer look at the YTA series and you'll find large terminals, improved wire routing and unrestrained access. That's because we took a long, hard look at how transmitters are actually installed in the field — and then eliminated all the little nuisances that get in the way of easy installation and operation.

- **Faster troubleshooting and less downtime**

The YTA series features auto set-up and advanced software diagnostic features. An alarm is activated when any process

extremes exceed the limitations of the transmitter. If the error message is not responded to within two hours, the event is recorded and stored in non-volatile memory as a permanent record. The self-diagnostics of the YTA series make it easier to identify the cause of problems.



Single Sensor RTD Input



Dual T/C Input



Dual RTD Input

- **The convenience of remote communications and configuration**

You get full support for BRAIN™, HART® and FOUNDATION Fieldbus™. And, you also have the advantage of local control functionality through PID. So, the YTA series gives you superior communications and control across a wide variety of applications. What's more, if you're used to programming DPharp with HART or BRAIN, then you'll be in very familiar territory when the time comes to program your YTA transmitters.

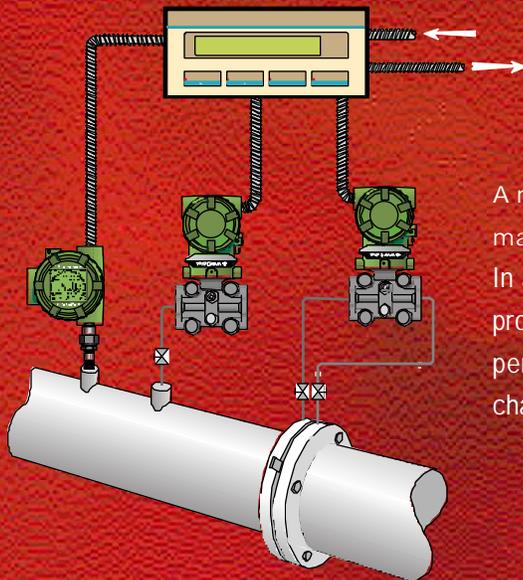
- **Rugged durability for the toughest environments**

Reliable, dual compartment housing isolates the electronics, terminal block and filters to provide outstanding corrosion resistance. Standard housing is FM/CSA/CENELEC explosion-proof and NEMA 4X/IP67.

- **Easier operation**

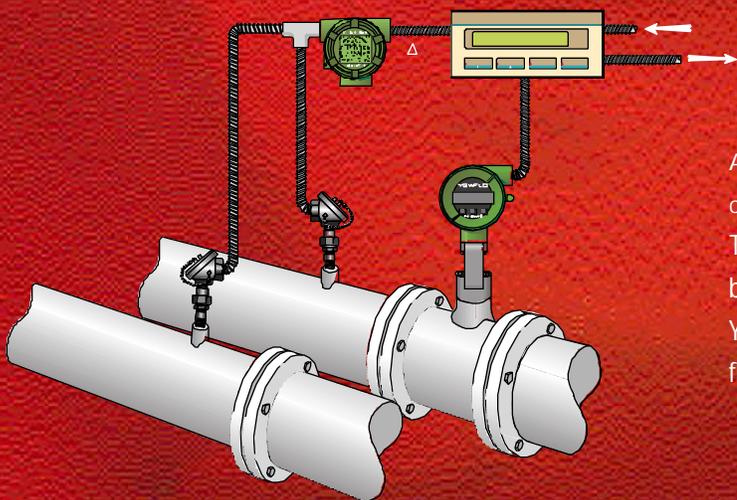
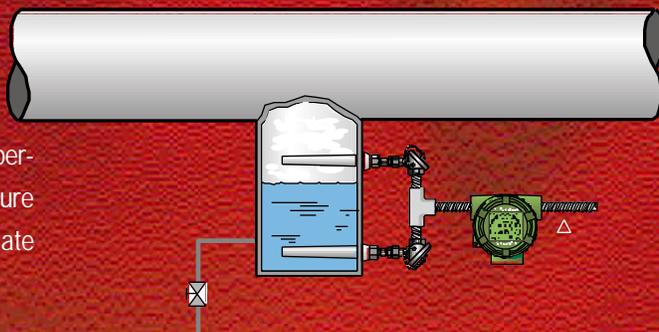
The versatile, easy-to-read display on the YTA series makes for much simpler configuration and operation. You have all the information you need — including simultaneous analog and digital indication — right at your fingertips.

# The YTA series means maximum performance and cost savings in a wide variety of applications.



A more efficient means of measuring mass and corrected volume gas flow  
In a typical orifice meter run, a YTA transmitter provides a reliable, affordable method for compensating temperature changes with volume changes – giving you a corrected volume reading.

A more cost-effective method of steam line condensation pot control  
Use a YTA transmitter to measure differential temperature in a condensate trap. Once both temperature readings are the same, you know that condensate has filled the trap.



A more accurate way to calculate energy consumption for chilled water billing  
The YTA 320 measures the difference in temperature between water going into and out of the building. Our YEWFLO Vortex Flowmeter measures the volumetric flow rate, a Flow Computer calculates the energy used.

# Fieldbus is rapidly becoming the future of process control.

# We've already made it our future.

## What fieldbus is all about.

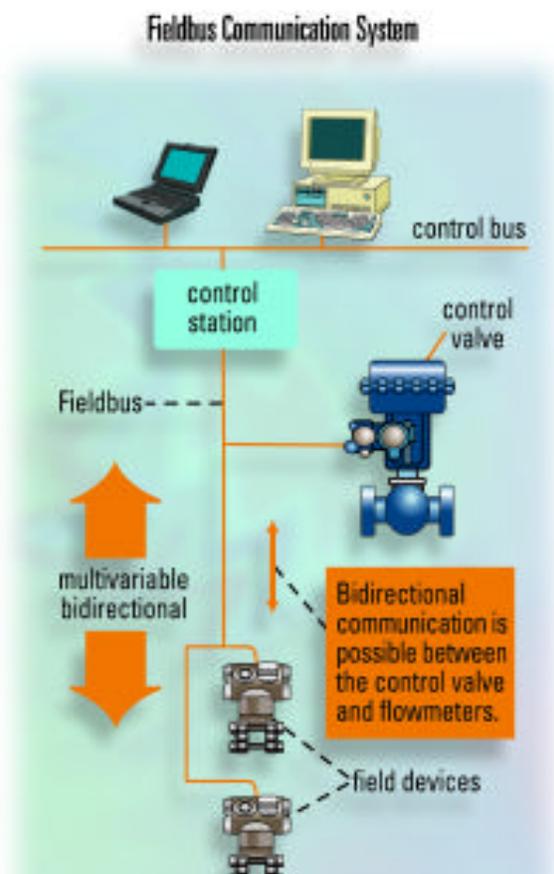
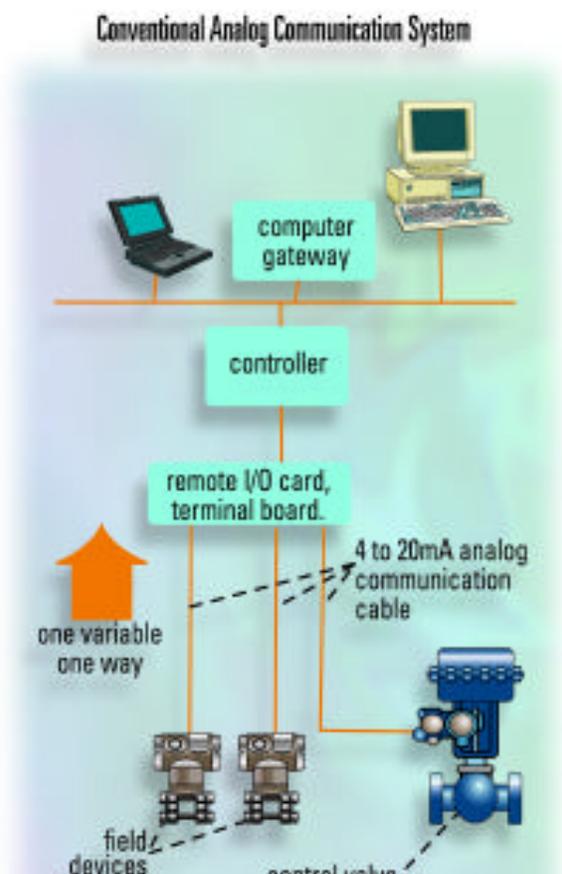
Fieldbus is the new, international standard for communications between field instruments and control systems. It's 100% digital. Truly bi-directional. And, introduces a whole new level of precision and manageability to your process control. Being fully digital, fieldbus is far superior to analog 4-20mA and even "hybrid" protocols such as BRAIN and HART.

## And what an incredible difference fieldbus will make.

- Exceptional accuracy — because the all-digital signal is resistant to the noise and errors that can occur with A/D or D/A conversion. Add a digital sensor and the result is unprecedented reliability, responsiveness, repeatability and accuracy.
- Less wiring hassles and costs — because the multi-drop capabilities of fieldbus let you attach multiple field devices

to a single cable. Fieldbus is also well-suited to multivariable devices. These devices sense multiple process variables (such as pressure, flow and temperature) and communicate via the fieldbus so no additional wiring is needed.

- Superior field-level control — because fieldbus allows field instruments to communicate with each other. That means greater responsiveness since control can be closer to the process itself. A field-based process is also less susceptible to problems elsewhere in the system, so you experience fewer communications bottlenecks and greater fault tolerance.
- Maximum interoperability — because FOUNDATION Fieldbus™ is the de facto global standard for the process control industry. It's supported by virtually all the leading system and instrumentation vendors and gives you "plug and play" interoperability.



# YTA Input/Output Selection Guide

There's a Yokogawa solution for virtually every process application.

 currently available  coming soon

Application	Standard	Input Range	YTA50	YTA70	YTA110	YTA310	YTA320
RTD	Pt100	IEC751 -200 to 850°C -328 to 1562°F					
	Pt200	IEC751 -200 to 850°C -328 to 1562°F					
	Pt500	IEC751 -200 to 850°C -328 to 1562°F					
	JPt100	JIS C1604 -200 to 850°C -328 to 932°F					
	Ni120	120 ohm nickel 0.00672 coefficient -70 to 320°C -94 to 608°F					
	Cu	9.042 ohm copper 0.0042 coefficient -50 to 250°C -58 to 482°F					
	Sensor Matching						
	Thermocouple	B	IEC584 100 to 1820°C 212 to 3308°F				
E		IEC584 -200 to 1000°C -328 to 1832°F					
J		IEC584 -200 to 1200°C -328 to 2192°F					
K		IEC584 -200 to 1372°C -328 to 2500°F					
L		DIN43710 -200 to 900°C -328 to 1652°F					
N		IEC584 -200 to 1300°C -328 to 2372°F					
R		IEC584 -50 to 1768°C -58 to 3214°F					
S		IEC584 -50 to 1768°C -58 to 3214°F					
T		IEC584 -200 to 400°C -328 to 752°F					
U		DIN43710 0 to 2300°C 32 to 4172°F					
W3		ASTM E988 0 to 2300°C 32 to 4172°F					
W5		ASTM E988 0 to 2300°C 32 to 4172°F					
mV			-10 to 800mV				
Ohm		0 to 2000 ohms					
Single Sensor							
Dual Sensor							
Automatic Sensor Backup							
Head Mounted							
Digital Indicator							
BRAIN							
HART							
FIELDBUS							

# SPECIFICATIONS

## Temperature Transmitter Selection

Model	Ambient Temperature Limits	A/D Accuracy (100 ohm RTD)	D/A Accuracy (100 ohm RTD)	Ambient Temperature Effect	Input Types
<b>Low Cost</b>					
YTA70 YTA50	-40 to 185° F (-40 to 85° C)	+/- 0.2% of calibrated Span		+/- 0.2% of calibrated Span per 10° C change	2 RTD, 12 T/C
<b>Mid Range</b>					
YTA110	-40 to 185° F (-40 to 85° C)	+/- 0.1% of calibrated Span		+/- 0.2% of calibrated Span per 10° C change	6 RTD, 12 T/C, Millivolt, Ohm
<b>High Performance</b>					
YTA310	-40 to 185° F (-40 to 85° C)	+/- 0.14° C	+/- 0.02% Span	+/- 0.00726° C per 10° C change (Pt100, 200° C range)	6 RTD, 12 T/C Millivolt, Ohm,
<b>MultiVariate</b>					
YTA320	-40 to 185° F (-40 to 85° C)	+/- 0.14° C	+/- 0.02% span	+/- 0.0726° C per 10° C change (Pt100, 200° C range)	6 RTD, 12 T/C, Millivolt, Ohm, Differential



**YOKOGAWA** 

Represented by:

Distribué par :



2 rue René Laennec 51500 Taissy France  
Fax: 03 26 85 19 08, Tel : 03 26 82 49 29

Email : hvssystem@hvssystem.com  
Site web : www.hvssystem.com

ZE-1