DIGITAL TEMPERATURE SENSORS FOR PRECISE ENGINEERING

DESIGN QUESTIONS?

- What object or medium is meant to be measured?
- What kind of application: HVAC/car, thermostat, etc.?
- Available space on PCBA?
- How shall the object of interest brought in thermal contact with the sensor?
- Shall the top of the sensor be in contact with the object to be measured?
- Shall the pads of the sensor be isolated from the object to be measured?
- Are there requirements concerning protection against humidity, dust, dirt etc?
- Other interface or output preferred?

Todays demanding applications in industries require best in class performance. Digital sensor technology has responded by enabling precise measurement, higher reliability and improved power efficiency. It improves performance by eliminating the signal processing error that is inherent in analog systems.

TE Connectivity's (TE) digital temperature sensors provide leading accuracy. They are available in miniature packages designed specifically for tight spaces, and respond quickly to changes in process temperature. The tiny chip size and optimized microcircuit design allows fast conversion times along with very low power consumption. With easy integration in a microcontroller environment and the production process, our Temperature System Sensor (TSYS) Series offers excellent value with leading accuracy for OEMs in a variety of applications:

- MEDICAL TRANSPORTATION
- AUTOMOTIVE
- HVACR
- INDUSTRIAL
- CONSUMER

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TSYS DIGITAL TEMPERATURE SENSORS






Model	IC Package Size	Power Supply	Operating Temp. Range	Accuracy (Temp. Range)	Accuracy (Total Temp. Range)	Interface
TSYS01	QFN16 4 x 4 mm	2.2V to 3.6V	-40° to +125°C	±0.1°C (-5° to +50°C)	±0.5°C	I²C & SPI [1]
TSYS01-01				±0.1°C (-20° to +70°C)	±0.5°C	
TSYS02D	TDFN8 2.5 x 2.5 mm	1.5V to 3.6V		±0.2°C (-5° to +50°C)	±1.0°C	I²C [2]
TSYS02-04D				±0.4°C (-5° to +50°C)	±1.5°C	
TSYS02-08D				±0.8°C (-5° to +50°C)	±2.0°C	
TSYS02-12D				±1.2°C (-5° to +50°C)	±2.5°C	

[1] Switchable via Input Pin
[2] Further Output Configurations 0xD: I²C (standard), 0xP PWM (Pulse Width Module), 0xS SDM (Pulse sequence representing analog voltage)

UNMATCHED PRECISION

- TE's TSYS0x cover an extended operating temperature range from -40° to +125°C
- Accuracy of 0.1°C, for a specific operating temperature range from typical -5° to +50°C
- Factory compensated and calibrated to improve performance

OPTIMAL ENGINEERING

- Digital output with standard interface I²C or SPI
- Low power consumption
- Small package size with low thermal mass and fast response time

EASE OF APPLICATION

- Packaged in tape and reel
- Adaptable to any SMD production processes or condensation event

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