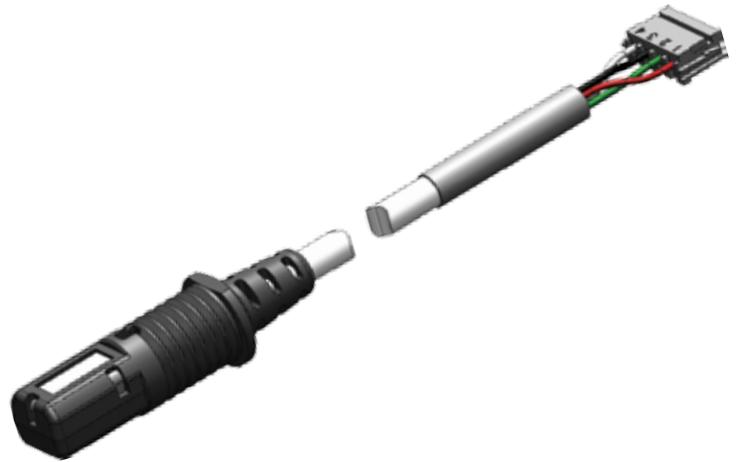# TELAIRE®

T9602 Humidity & Temperature Sensor for OEM Installation

Features

- Fully calibrated and temperature compensated

- Water resistant (IP 67 Certified)

- Digital or Pulse Density Modulated convertible to analogue

- Available in multiple flexible cable lengths

- Precision & accuracy (±2% RH, ±0.5°C, 14 bit resolution)

- Low current consumption

- Designed for reliability in harsh environments

- Flexible mounting options

Applications

- Energy saving HVAC Control – Air Conditioning, Refrigeration, Indoor Air Quality, Vent Fans, Home Appliances, Humi/Dehumidifiers

- Process Control & Instrumentation - Medical Instruments, Handheld Devices, Weather Stations, Food Processing, printers, RFID's

The T9602 offers the most advanced and cost effective humidity and temperature sensing solution for virtually any type of application.

Based on our own capacitive polymer sensor chip and ASIC integrated into an easy mount OEM package.

Each sensor is individually calibrated and tested. The T9602 is simple and ready to use without further calibration or temperature compensation.

The T9602 provides linearized output signals in one of two interfaces to meet customer requirements.

- I^2C interface

- PDM output convertible to an analogue signal

- Refer to Application guide section for more detailed interfacing information

Amphenol
Advanced Sensors

Assembly Accuracy Specifications

Relative Humidity (RH%)

|	
Resolution	14 bit (0.01% RH)
Accuracy[1]	±2.0% RH (20~80% RH)
	±3.5% RH (0% to 20%) and (80% to 100%) (*Figure 1*)
Repeatability	±0.2% RH
Hysteresis	±2.0% RH
Linearity	<2.0% RH
Response Time[2]	≤ 29 sec (T 63%)
Temp Coefficient	0.13% RH/°C (at 10~60°C, 10~90% RH)
Operating	0 ~ 95% RH
Long Term Drift	<0.5% RH/year (Normal conditions)

1. Accuracies measured at 25°C, nominal voltage.

2. 30% RH step response, measured at 25°C in a 1 m/sec air flow.

Temperature (°C)

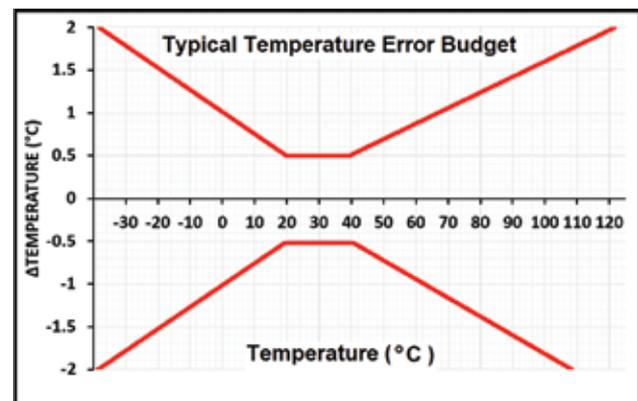|	
Resolution	14 bit (0.01°C)
Accuracy[1]	±0.5°C
Repeatability	±0.1°C
Response Time[2]	≤116 sec (T 63)
Operating Range[3]	-20°C to 70°C
Long Term Drift	<0.05°C/year (Normal conditions)

1. Accuracies measured at 25°C, nominal voltage.

2. 25°C step response in a 1 m/sec air flow.

3. Minimum design range, documented testing 0°C to 50°C.

Typical %RH Accuracy
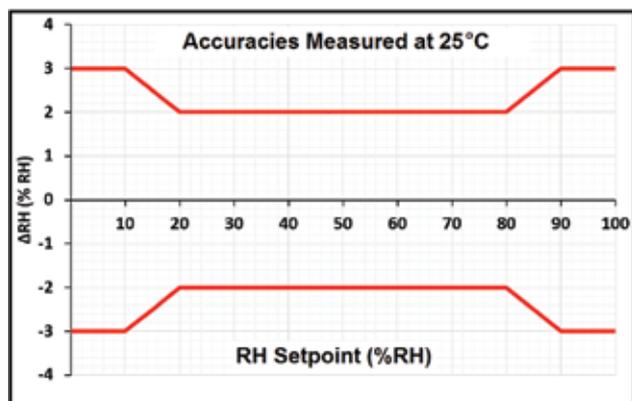
Typical Temperature Accuracy

Application Guide

Users can download Application Guide AAS-916-127 at the below link. The user will find the firmware requirements needed to interface to the digital sensors in the update mode, and the processes necessary to convert the Pulse Density Modulated (PDM) outputs to analogue outputs.

Click here to download Application Guide AAS-916-127

Hardware and Environmental Specifications

Method
Capacitive polymer RH Sensor, PTA (Proportional to Absolute) integrated temperature sensor.

Operating Conditions
- -20°C to 70°C
- 0% to 100% RH

Storage Conditions
- -40°C to 85°C

Output Modes
- Digital Models   - I^{2}C
- Analogue Models - PDM (Convertible to analogue)

Power Supply Requirements
- 3.3 VDC or 5.0 VDC ±5% (Nominal voltage is model dependent)

Current Consumption
- 750 µA (typical)

Cable
- Outer Diameter 4.20 ± 0.20 mm, 4 Core, shielded, double insulated and flexible
- Varying lengths dependent on the model. Refer to the ordering Information

Connector
- Manufacturer - JST
- Sensor Connector Housing - Part Number EHR-4
- Sensor Connector Header   - Part Numbers B4B-EH-A or S4B-EH

Mounting Options
- Grommet or cable P Clamp
- P Clamp - 9.53 mm Hellermann Tyton (MPN T3D03750M4) or equivalent
- Grommet – 11 mm Advanced Antivibration Components (MPN V12R30M16004616) or equivalent.

Approvals and Qualifications
- RoHS / REACH Compliant
- IP67 Certified
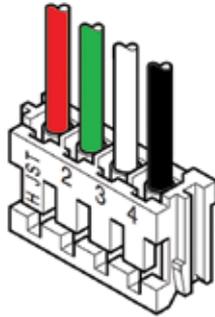- Halogen Free Design
- Cable UL VW-1 Certified
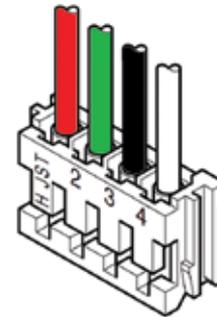
Warranty Terms
- 12 months

Sensor Pin Design

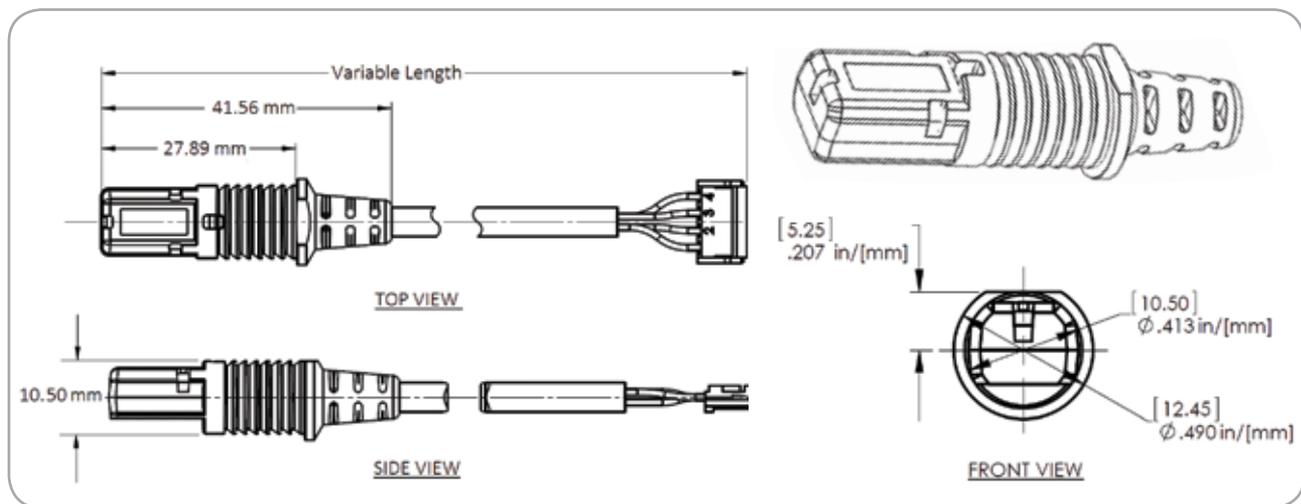## Digital

1. V+
2. Ground
3. SDA
4. SCL

Analogue

1. V+
2. Ground
3. PDM RH
4. PDM Temp

Customer Interface Drawing

Variable Length
41.56 mm
27.89 mm

TOP VIEW

10.50 mm

SIDE VIEW

$\begin{bmatrix} 5.25 \\ .207 \end{bmatrix}$ in/[mm]

$\begin{bmatrix} 10.50 \\ \emptyset .413 \end{bmatrix}$ in/[mm]

$\begin{bmatrix} 12.45 \\ \emptyset .490 \end{bmatrix}$ in/[mm]

FRONT VIEW

Ordering Information

Part Number	Output	Operating Voltage	
T9602-3-D	I2C Digital	3V	1.8m cable length
T9602-5-D	I2C Digital	5V	1.8m cable length
T9602-3-D-1	I2C Digital	3V	1m cable length
T9602-5-D-1	I2C Digital	5V	1m cable length
T9602-3-A	PDM Analogue	3V	1.8m cable length
T9602-5-A	PDM Analogue	5V	1.8m cable length
T9602-3-A-1	PDM Analogue	3V	1m cable length
T9602-5-A-1	PDM Analogue	5V	1m cable length

Amphenol
Advanced Sensors

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.