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CATALOG KỸ THUẬT · JOHNSON CONTROLS

Cảm biến nhiệt độ độ ẩm HE-69

cảm biến ống gió $\pm 2\%$, $\pm 3\%$ RH · Ni1000, Pt1000

HE-69 Johnson Controls – cảm biến nhiệt độ độ ẩm ống gió $\pm 2\%$ hoặc $\pm 3\%$ RH, Ni1000/Pt1000, ngõ ra 0–10 V, hiệu chuẩn chuẩn NIST, đạt UL plenum, cho AHU.

Mã: HE-69 · Hãng: Johnson Controls · Hotline: 093 797 2339

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Temperature & Humidity Sensor and Transmitter

HE-69 Series Duct Temperature and Humidity Sensor

Introduction

The HE-69xx Sensor Series contains relative humidity (RH) sensing products with $\pm 2\%$ or $\pm 3\%$ accuracy.

The HE-69xx Series Duct Probe Humidity and Temperature Sensors combine humidity and temperature sensing in an all-plastic enclosure for use inside ducts. These sensor models are available with a nickel or platinum temperature sensor.

The input power options are 14 VDC to 30 VDC or 20 VAC to 30 VAC. The output signal is 0 VDC to 10 VDC for humidity indication.



Figure 1: HE-69xx Series Duct Probe Humidity and Temperature Sensor

Features and Benefits

- Tested and calibrated with equipment certified as compliant with National Institute of Standards and Technology (NIST) guidelines.
- $\pm 2\%$ RH accurate model includes test and calibration equipment certificate of calibration conformance.
- User-selectable output voltage range allows choice of standard voltage outputs for use with systems in service or new systems.
- All-plastic material for duct probe improves thermal performance and complies with Underwriters Laboratories Inc.® (UL) flammability ratings for plenum use; complies with Blue Angel (Germany) and TCO'95 (Sweden) environmental regulations.

The HE-69xx Series Duct Probe Sensors provide humidity and temperature sensing inside ducts. The humidity element senses over the entire range of 0% RH to 100% RH and is housed in a plastic enclosure that is easy to install.

Use temperature and humidity information from the HE-69xx Series Duct Probe Sensor to precisely calculate enthalpy. This calculation is important to determine an energy-efficient and cost-effective economization strategy.

Duct humidity is an important factor in the overall quality of indoor air. Use the HE-69xx Series Duct Probe Sensor to monitor and compare duct humidity with levels advised in ASHRAE ventilation standards.

Product Overview

Important: The HE-69xx Series Duct Probe Humidity and Temperature Sensor is intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the sensor could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the sensor.

Temperature & Humidity Sensor and Transmitter

Ordering Information

Table 1: HE-69xx Series Duct Probe Humidity and Temperature Sensors

	Ordering code number example	H	E	-	6	9	1	3	0	N	P	-	0
Application	H = Humidity sensing												
Device function	E = Element												
	-69												
Temperature sensor type	1 = 1K ohm Nickel 5 = 1K ohm Platinum, Class A												
Humidity sensor accuracy	3 = $\pm 3\%$ 2 = $\pm 2\%$												
Output signal	0 = 0 VDC to 10 VDC												
	N												
Enclosure style	P = Duct probe												
Logo	0 = Johnson Controls												

Table 2: HE-69xx Series Duct Probe Humidity and Temperature Sensors ordering information

Product code number	Temperature sensor type	RH Accuracy	Output scale, set point scale, control type	Enclosure style	Logo
HE-69120NP-0	Ni1000	$\pm 2\%$	Proportional, 0 V to 10 V	Duct, probe	Yes
HE-69130NP-0	Ni1000	$\pm 3\%$	Proportional, 0 V to 10 V	Duct, probe	Yes
HE-69520NP-0	Pt1000 Class A	$\pm 2\%$	Proportional, 0 V to 10 V	Duct, probe	Yes
HE-69530NP-0	Pt1000 Class A	$\pm 3\%$	Proportional, 0 V to 10 V	Duct, probe	Yes



Temperature & Humidity Sensor and Transmitter

Technical specifications

Table 3: HE-69xx Series Duct Probe Humidity and Temperature Sensor

Product	HE-69xx Series Duct Probe Humidity and Temperature Sensor		
Power requirements	12 VDC to 30 VDC or 18 VAC to 30 VAC at 50/60 Hz, Class 2		
Current draw	DC supply	5 mA excluding load	
	AC supply	14 mA excluding load	
Acceptable wire gauge	16 AWG to 24 AWG wire; 18 AWG wire preferred		
Humidity element at 77° F (25° C)	Signal	0 VDC to 5 VDC or 0 VDC to 10 VDC, 1K ohm maximum load	
	Accuracy	HE-69x2	±2% RH for 20% to 80% RH at 77° F (25°C)
			±4% RH for 10% to 20% and 80% to 90% RH at 77° F (25°C)
		HE-69x3	±3% RH for 20% to 80% RH at 77° F (25°C)
			±5% RH for 10% to 20% and 80% to 90% RH at 77° F (25°C)
Temperature coefficient	-0.03% RH/°C		
Temperature sensors	Thin film nickel	Accuracy	±0.34° F (0.18°C) at 70° F (21°C)
		Reference resistance	1K ohm at 70° F (21°C)
		Resistance change	Approximately 3 ohm/° F (5 ohm/°C)
	Silicon	Accuracy	±1° F(0.6°C) at 70° F (21°C)
		Reference resistance	1,035 ohm at 77° F (25°C)
		Resistance change	Approximately 4 ohm/° F (8 ohm/°C)
	Thin film platinum	Accuracy	±0.65° FF at 70° FF (±0.36° C at 21°C)
		Reference resistance	1K ohm at 32° F (0°C)
		Resistance change	Approximately 2 ohm/° F (4 ohm/°C)
Electrical connections	3-position and 2-position screw terminal blocks		
Ambient operating conditions	32° F to 140° F (0°C to 60°C)		
	0% to 100% RH, 85° F (29.4°C) maximum dew point		
Survival operating conditions	-40° F to 140° F (-40°C to 60°C)		
	0% to 100% RH, 85° F (29.4°C) maximum dew point		
Materials	Blue plastic cover with blue plastic housing and probe		
Dimensions	Duct probe (H x W x D)	3.28 in. x 3.25 in. x 8.27 in. (83 mm x 83 mm x 210 mm)	
	Probe (L x D)	6.25 in. x 0.98 in. (159 mm x 25 mm)	
Shipping weight	0.6 lb (0.3 kg)		
Compliance	United States	UL Listed, CCN XAPX, File E27734; to UL 60730-1; and IEC 60730-2-13. Plenum Rated (UL 2043)	
	Canada	cUL Listed, CCN XAPX7, File E27734; to CAN/CSA E60730-1; and CAN/CSAE60730-2-13	
CE	Europe	CE Mark - Johnson Controls declares that this product is in Compliance with the essential requirements and other relevant provisions of the EMC Directive.	
	Australia and New Zealand	RCM Mark, Australia/NZ Emissions Compliant	



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