HT-1300 Series

Temperature and Humidity Duct Sensor

Product Bulletin

Specifically designed for HVAC application, the HT-130x-UD1 sensor is a highly accurate and reliable for measuring relative air humidity and temperature.

The enclosure minimizes installation cost and provides outstanding protection against contamination and condensation, thus ensuring flawless operation.

The HT-130x-UD1 employs the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants. Long term performance is granted by the PTFE membrane fitted to the standard protection cap, suitable for most common HVAC applications. The standard protection cap can be replaced with a series of alternative protection caps specially designed for harsh environments.

In combination with a long calibration experience, the HT-130X-UDx provides a humidity measurement accuracy of ±2,5%.

HT-1300

Protection Caps for harsh enviroment

- **Power Supply 15...35 VDC / 24 VAC**
  Flexible application
- **Humidity Accuracy 2.5% RH from 10 to 95% RH**
  Suitable for a wider range of applications
- **Temperature Outputs 0...10 VDC or Pt1000**
  Suitable for any field controllers
- **HT-130x-UD1 Duct probes length 200 mm**
  Easy to install. No expert required
- **HT-130x-UD1 Protection Class IP65**
  It can be mounted in several environments
- **HT-1300-CAP-10x Protection Caps**
  For a longer term of optimal performance in harsh environments
- **Calibration Certificate**
  Each product is calibrated against factory standards traceable to international standard units

Johnson Controls

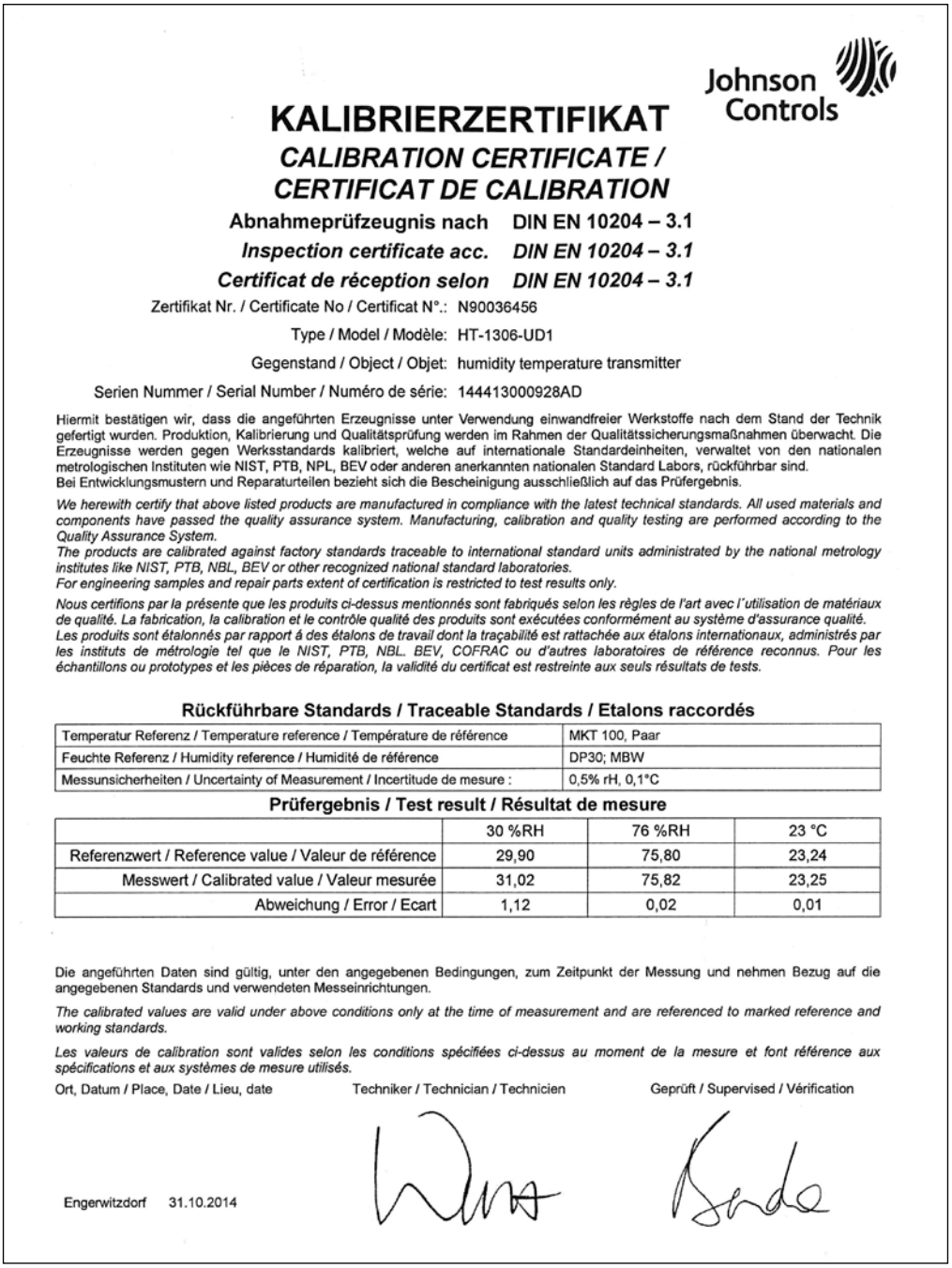
Calibration Certificate

Each sensor is delivered with a Calibration Certificate which certifies that the product is manufactured in compliance with the latest technical standards.

All used materials and components have passed the quality assurance system. Manufacturing, calibration and quality testing are performed according to the Quality Assurance System.

The products are calibrated against factory standards traceable to international standards units administrated by the national metrology institutes like NIST, PTB, NBL , BEV or other recognized national standard laboratories.

For engineering samples and repair parts extent of certification is restricted to test result only.



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KALIBRIERZERTIFIKAT

CALIBRATION CERTIFICATE / CERTIFICAT DE CALIBRATION

Abnahmeprüfzeugnis nach DIN EN 10204 – 3.1

Inspection certificate acc. DIN EN 10204 – 3.1

Certificat de réception selon DIN EN 10204 – 3.1

Zertifikat Nr. / Certificate No / Certificat N°.: N90036456

Type / Model / Modèle: HT-1306-UD1

Gegenstand / Object / Objet: humidity temperature transmitter

Serien Nummer / Serial Number / Numéro de série: 144413000928AD

Hiermit bestätigen wir, dass die angeführten Erzeugnisse unter Verwendung einwandfreier Werkstoffe nach dem Stand der Technik gefertigt wurden. Produktion, Kalibrierung und Qualitätsprüfung werden im Rahmen der Qualitätssicherungsmaßnahmen überwacht. Die Erzeugnisse werden gegen Werksstandards kalibriert, welche auf internationale Standardeinheiten, verwaltet von den nationalen metrologischen Instituten wie NIST, PTB, NPL, BEV oder anderen anerkannten nationalen Standard Labors, rückführbar sind.
Bei Entwicklungsmustern und Reparaturteilen bezieht sich die Bescheinigung ausschließlich auf das Prüfergebnis.

We herewith certify that above listed products are manufactured in compliance with the latest technical standards. All used materials and components have passed the quality assurance system. Manufacturing, calibration and quality testing are performed according to the Quality Assurance System.
The products are calibrated against factory standards traceable to international standard units administrated by the national metrology institutes like NIST, PTB, NBL, BEV or other recognized national standard laboratories.
For engineering samples and repair parts extent of certification is restricted to test results only.

Nous certifions par la présente que les produits ci-dessus mentionnés sont fabriqués selon les règles de l'art avec l´utilisation de matériaux de qualité. La fabrication, la calibration et le contrôle qualité des produits sont exécutées conformément au système d'assurance qualité.
Les produits sont étalonnés par rapport á des étalons de travail dont la traçabilité est rattachée aux étalons internationaux, administrés par les instituts de métrologie tel que le NIST, PTB, NBL. BEV, COFRAC ou d'autres laboratoires de référence reconnus. Pour les échantillons ou prototypes et les pièces de réparation, la validité du certificat est restreinte aux seuls résultats de tests.

Rückführbare Standards / Traceable Standards / Etalons raccordés

Temperatur Referenz / Temperature reference / Température de référence	MKT 100, Paar
Feuchte Referenz / Humidity reference / Humidité de référence	DP30; MBW
Messunsicherheiten / Uncertainty of Measurement / Incertitude de mesure :	0,5% rH, 0,1°C

Prüfergebnis / Test result / Résultat de mesure

	30 %RH	76 %RH	23 °C
Referenzwert / Reference value / Valeur de référence	29,90	75,80	23,24
Messwert / Calibrated value / Valeur mesurée	31,02	75,82	23,25
Abweichung / Error / Ecart	1,12	0,02	0,01

Die angeführten Daten sind gültig, unter den angegebenen Bedingungen, zum Zeitpunkt der Messung und nehmen Bezug auf die angegebenen Standards und verwendeten Messeinrichtungen.

The calibrated values are valid under above conditions only at the time of measurement and are referenced to marked reference and working standards.

Les valeurs de calibration sont valides selon les conditions spécifiées ci-dessus au moment de la mesure et font référence aux spécifications et aux systèmes de mesure utilisés.

Ort, Datum / Place, Date / Lieu, date — Techniker / Technician / Technicien — Geprüft / Supervised / Vérification

Engerwitzdorf 31.10.2014

Installation

The installation of electrical wiring must conform to local codes and carried out by authorized personnel only. Users should ensure that all Johnson Controls products are used safely and without risk to health or property.

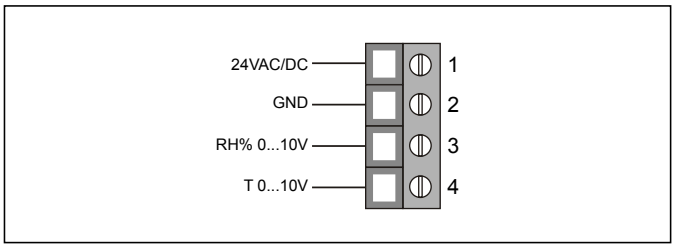
The HT-130x-UD1 series duct humidity sensors are intended to provide input to equipment under normal operating conditions. Where failure or malfunction of an HT-130x-UD1 series duct humidity sensors could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory) intended to warn of, or protect against, failure or malfunction of the HT-130x-UD1 sensors must be incorporated into and maintained as part of the control system.

To avoid damage to the HT-130x-UD1 sensors, do not mount the unit in a harsh locations where high concentrations of corrosive vapors, O_2, or Dust are present. To mitigate the effect in the harsh environments please select the appropriate Protection caps in the HT-1300 Accessory section.

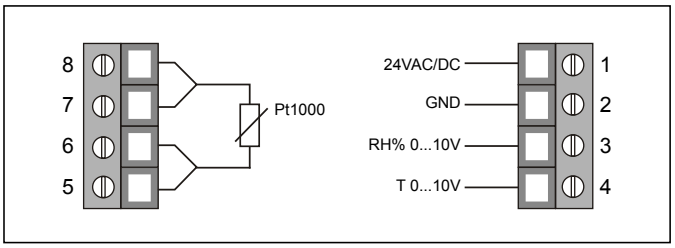
Wiring Instructions

For wiring follow the instructions below:

- All wiring must be in accordance with local regulations and national rules.
- Do not attempt field repairs. If the transmitter is not operating properly, even though it is wired connectly, it should be replaced.



HT-1301-UD1
HT-1302-UD1



HT-1306-UD1

HT-1300 Accessory

The choice of appropriate filter cap is essential for the long-term performance of the sensor in a harsh environments where pollution, dust, gases or sterilization process with H_2O_2 (hydrogen peroxide) can reduce the life of the humidity sensor.

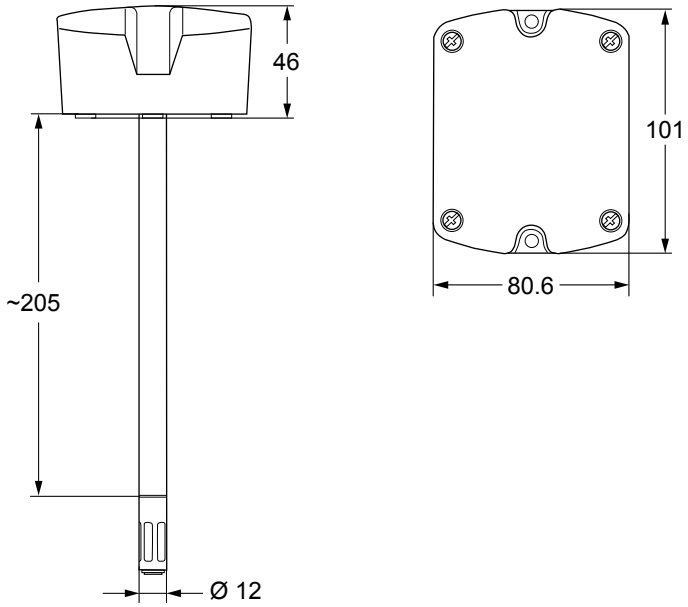
Protection Caps for harsh environments

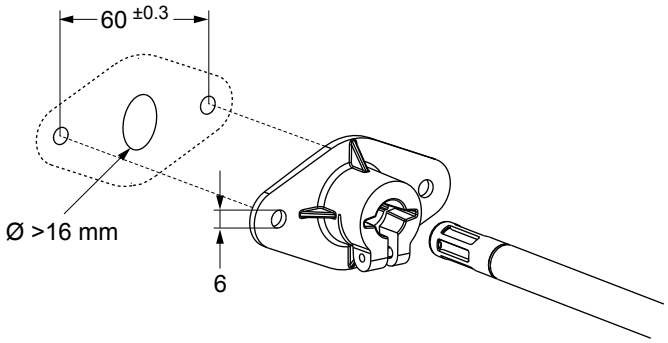
Filter Type	Item code	Construction	Features	Application
	**HT-1300-CAP-103**	**Material:** sintered stainless steel **Pores size:** 10µm **Length:** 33 mm (1.30“)	For high mechanical stress and strong pollution. **T range:** -40…180 °C (-40...356 °F) **Response time t $_{10/90}$:** 30s	• Industrial process control • Agriculture • Life stock barns • Unsuitable for condensing • Environment
	**HT-1300-CAP-105**	**Material:** PTFE sintered **Pores size:** 50µm **Length:** 33 mm (1.30“)	For very dirty, oily environment. **T range:** -40…180 °C (-40...356 °F) **Response time t $_{10/90}$:** 14s	• Industrial process control • Chemical industry • Swimming pool • Very polluted environment • Unsuitable for condensing
	**HT-1300-CAP-106**	**Body:** polycarbonate **Filter:** stainless steel wire mesh. **Pores size:** 30µm **Length:** 33 mm (1.30“)	For low mechanical stress and low pollution level. **T range:** -40…120 °C (-40...248 °F) **Response time t $_{10/90}$:** 15s	• Climate control HVAC • Dryers an • Humidifiers • For high RH / condensing environment
	**HT-1300-CAP-115**	**Material:** PTFE sintered **Pores size:** 50µm **Length:** 33 mm (1.30“)	Catalytic filter for H2O2 environment. **T range:** -40…180 °C (-40...356 °F) **Response time t $_{10/90}$:** 14s	• Pharmaceutical • Biotech • Sterilization with H_2O_2

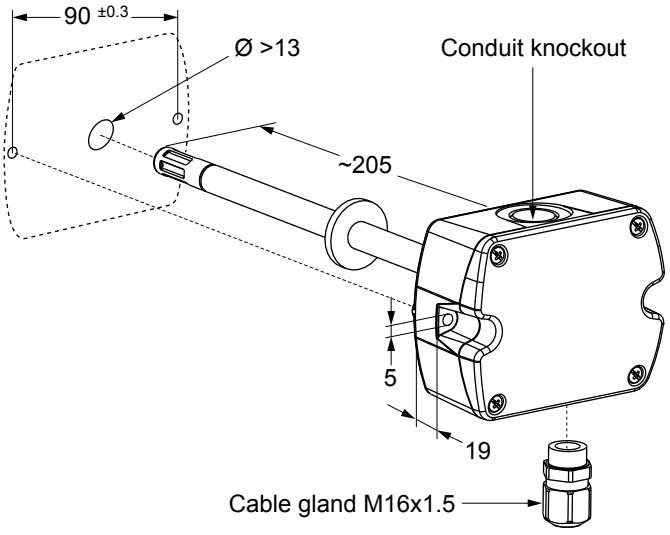
Note:

- Operating range is limited to the max operating range of the sensor.
- The standard cap provided with the HT-130x is polycarbonate body with PTFE membrane with pores size: 1µm for an excellent protection against fine dust in common dusty environments like most common HAVC and BAS applications. Response time $t_{10/90}$: 15s.

Dimensions *(in mm)*







Ordering Codes

HT-1300 Plant Humidity sensors

Codes	Humidity Working Range	Humidity Output	Humidity Accuracy	Temperature Working Range	Temperature Output	Supply Voltage
HT-1301-UD1	10...95 %	0...10 VDC	2,5 %	-15...60 °C	0...10 VDC	15 - 35 VDC or 24 VAC ±20%
HT-1302-UD1				0...40 °C	0...10 VDC	
HT-1306-UD1				-15...60 °C	Pt1000	

HT-1300 Accessories

Filter Caps for harsh environments

Codes	Description	Application
HT-1300-CAP-103	Stainless Steel Sintered Filter cap	For industrial, Agriculture, barns
HT-1300-CAP-105	PTFE Sintered Filter Cap	For chemical and very polluted environment
HT-1300-CAP-106	Polycarbonate body with Stainless Steel wire mesh Filter Cap	For Cap Dryers and Humidifiers
HT-1300-CAP-115	Catalytic Filter in PTFE Filter Caps	For Pharm, Biotech, High Oxygen concentration, Sterilization with H_2O_2

Standard Filter Cap replacement

Codes	Description
HT-1300-CAP-103	Kit of 10 pcs: Mounting Flange, Cable Gland, Screws/Fishers, Gasket, and standard protection Cap, PTFE Membrane for Dusty and Building Automation applications.

Technical Specifications

Sensor	HT-1301-UD1 HT-1302-UD1	HT-1306-UD1
Power Supply	15 - 35 VDC or 24 VAC ±20%	
Relative Humidity		
Analog Output 0 to 100% RH	0 - 10 V - 1mA < I_L < mA	
Working Range	10...95 RH	
Accuracy at 20 °C	± 2.5% RH	
Temperature Dependency	Typ. ±0.03% RH / °C	
Temperature		
Analog Output *	0 - 10 V	Pt1000
T-Accuracy at 20 °C	±0.3 °C	EN60751 Class A (±0.15 °C + 0.002* T °C)
Output	Analog	Passive
	* Output scaling *see "Ordering Codes" table*	
Current Consumption		
Analog	With DC power supply typ. 5 mA With AC power supply typ. 13 mA	
Connection	Screw terminals, max 1.5 mm^2	
Housing / Protection Class	Polycarbonate (UL listed) / IP65	
Cable Gland	M16 x 1.5	
Sensor Protection	Standard Cap - PTFE Membrane filter Protection Caps for harsh environment optional	
Electromagnetic Compatibility	EN61326-1 EN61326-2-3	
Temperature Ranges		
Operating Temperature	-15...60 °C (5...140 °F)	
Storage Temperature	-25...60 °C (-13...140 °F)	
CE Compliance	Johnson Controls, Inc., declares that these products are in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC	

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.