



Humidity Sensor using LoRaWAN communication (TEK 790D)

This device reads humidity levels and sends collected data over the LoRaWAN™ network. Ideally suited for a wide range of applications such as building automation, condition monitoring, predictive maintenance and many more use cases.

Features

- Humidity measurement range: 15-95%
- Up to 15 years battery life
- Suited to continuous level humidity measurement
- Configurable reporting schedule
- Works with all tanks
- Programmable internal level alarms to give real time visibility to critical levels
- EU 863-870MHz

Benefits

Having visibility to remote humidity readings offers:

- Real time visibility to abnormal conditions
- Ability to track historical humidity variations
- Optimized efficiency through improved humidity management controls increasing profitability
- Real-time data and alerts for quick troubleshooting and data-driven decisions
- Peace of mind enhances customer service, improves customer retention and increases market share.



Specification

Characteristic	TEK 790A LoRaWAN Humidity sensor
Dimensions/Weight	60mm x 105mm x 73mm / Weight 250g including brass temperature sensor, 220g without.
Housing Material	Acrylonitrile Butadiene Styrene (ABS) black moulded enclosure.
Operating Temperature	-20°C to +55°C Note 1
Storage Temperature	+20°C to +25°C clean, cool, dry and ventilated. Note 1
Humidity	15 – 95% RH LoRaWAN sensor. Humidity sensor is rated for 0..100% RH.
Environmental Protection	Ingress protected to IP68, Impact resistance to IK06, UV resistant, Flammability rating UL94-V0, Chemical resistant
Frequency	863 - 876MHz Nominal 868MHz ISM band.
Output power	+14dBm (25mW) (as measured into the internal antenna on the PCB; internal antenna gain = -3dB typ)
Receiver Sensitivity	Up to -136dBm
Approximate range	More than 15km range in sub-urban situation (depends on environmental configuration) More than 2km range in urban situation (depends on environmental configuration)
Humidity sensor	11.4mm diameter plastic sensor with variable length connection leads.
Accuracy/resolution	Accuracy of +/- 3 % RH (35...75% RH). Resolution is typically 0.4%RH and 1...3.6V ratiometric output with 10 bit (1023 A/D) resolution.
Material compatibility	Suitable for use with multiple chemical conditions including: SO ₂ , O ₃ , NO, CO ₂ , H ₂ S, H ₂ SO ₄ , HNO ₃ , HCl. Consult factory for other applications.
User interface	Slide switch with bi-colour LED for user feedback on unit status and RF signal strength.
Battery life	Up to 15 Years from activation (Note 2).
Battery technology	3.6V SAFT LS17500 or EVE ER17505 capacity 3.6Ah
Manual Activation	Integrated slide activation switch. Installation feedback is provided via a bi-colour LED.
Mounting	Wall mount with screws, Vertical pipe mounting with cable ties, Horizontal pipe mounting with cable ties

Conformity

EMC directive 2014/30/EU	The Electromagnetic Compatibility (EMC) Directive ensures that electrical and electronic equipment does not generate, or is not affected by, electromagnetic disturbance.
LVD directive 2014/35/EU	The Low Voltage Directive (LVD) ensures that electrical equipment within certain voltage limits provides a high level of protection for European citizens, and benefits fully from the Single Market.
RED directive 2014/53/EU	The Radio Equipment Directive ensures a Single Market for radio equipment by setting essential requirements for safety and health, electromagnetic compatibility, and the efficient use of the radio spectrum
RoHS directive 2011/65/EU	This Directive lays down rules on the restriction of the use of hazardous substances in electrical and electronic equipment (EEE) with a view to contributing to the protection of human health and the environment, including the environmentally sound recovery and disposal of waste EEE.
LoRa Alliance	Compliant to LoRaWAN 1.0.2 Specification
REACH	REACH (EC Regulation 1907/2006)

Note 1: Storage and operation above 25°C may reduce battery life. Shelf life recommended not to exceed 12 months.

Note 2: Based on activation within 6 months of the manufacturing date of the product, and device configuration for 4 measurement per day, 4 LoRaWAN connections per day from a location where the LoRaWAN coverage does not require retries (SF12), and a normal distribution over the operating temperature range centered at +25°C (77°F).