WiSensys® Wireless Sensor WS-DLC

Overview

WS-DLC measures CO_2, humidity and temperature and transmits data to the base station. Sensing is done using internal digital sensors. The intervals for sensing and transmission are set at installation time using the WiSensys® PC program SensorGraph.

Sensor values are sent by the receiving base station to:
- WiSensys® PC software **SensorGraph** via a serial interface or to
- Wisensys® internet **Websensys** via TCP/IP or GPRS
- Or to a data logger, PLC, automation system via RS485/422
- Or in the case the base station is equipped with an **analog output module** the values can be forwarded as 0 -30 V DC signals (max 4 outputs) to a data logger or PLC system.

The sensor has a unique identity and a network ID. Optionally the following values can be assigned to the sensor: Friendly Name, Minimum Trip Value and Maximum Trip Value. Trip values are used to signal an alarm condition to the base station when these values are exceeded.

The sensor can locally store up to 10.000 measurements in non-volatile memory. This means about 3000 for each quantity. This storage is used when a connection to the base station is not available to ensure that measurements are not lost. Whenever the sensor is in range again with the base station or a range extender, the stored data is transmitted to the base station in case the user has selected the option "retransmit missed values".

The distance between sensor and base station can be up to 1000 meters in case of free line-of-sight. Characteristic in-building range values are between 50 and 80 meters. By using range extenders these distances can be extended

For CO2 measurements the sensor has a self-calibration technique that is designed to be used in applications where concentrations will drop to outside ambient conditions (approximately 400 ppm) at least 3 times in a 14 days period. For applications that do not see periodic ambient conditions a yearly calibration may be necessary.
Unit is calibrated 0-2000ppm. Serial digital output will read to 20.000ppm.

The sensor is externally powered with 8 - 30VDC.

Features

- Measurement of CO_2, humidity and temperature conditions
- Ability to store 10.000 measurements; overwrites oldest data when full
- Programmable measurement interval
- Programmable transmission interval
- Attractive ABS enclosure
- Wall mounting possibilities included in enclosure
- Range: 1000m with free line-of-sight
- Easy to add sensors to operational system
- PC software for installation

Specification WS-DLC

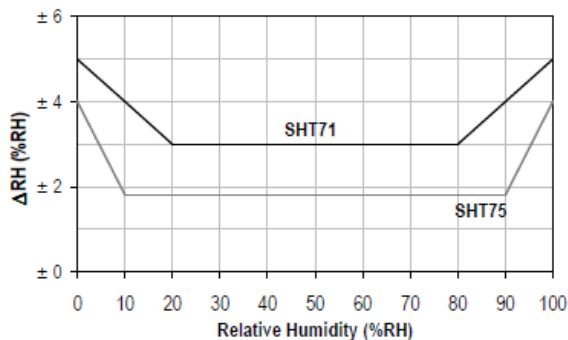| Function	Sensor	
Type	CO_2, humidity , temperature	
Sensor type	Internal, digital	
Measurement range	CO_2	0 ppm to 20.000 ppm
	Humidity	10% to 95% non-condensing
	Temperature	-20°C to +80°C (see operating limits)
Measurement accuracy (see figure SHT75 below)	CO_2	±40ppm + 3% of reading @ 22°C
	Humidity	±1,8%RH from 10% to 90%RH; ±4%RH otherwise
	Temperature	±0.3°C @ 25°C, ±0,5°C from 0°C to +50°C, ±1,2°C from -20°C to +80°C
Measurement resolution	CO_2	1ppm
	Humidity	0.1%RH
	Temperature	0.1°C
Measurement interval (M)	From 1 second up, programmable from PC. Maximum 200 seconds, **default** 20 seconds.	
Samples per Transmission (T)	From 1 to 3 samples, **default** 1.	
Alarm thresholds for base station alarm	Min/max temperature values Min/Max humidity values Min/Max CO2 values	
Operating limits	0°C to +50°C	
Power	8 – 24VDC	
	41 mA @12 VDC (average); 135 mA@12VDC (peak)	
Memory	10.000 measurements	
Radio standard	ETS 300 220	
Frequency	868 – 870MHz (915MHz US)	
Range	1000m free line-of-sight	
Housing	IP00	
Color	WiSensys® Green	
Dimensions	96(w) x 134(h) x 52.5(d) mm, excl. wall mount	
Configuration	Through WiSensys® PC software SensorGraph	
Regulatory	R&TTE, CE	

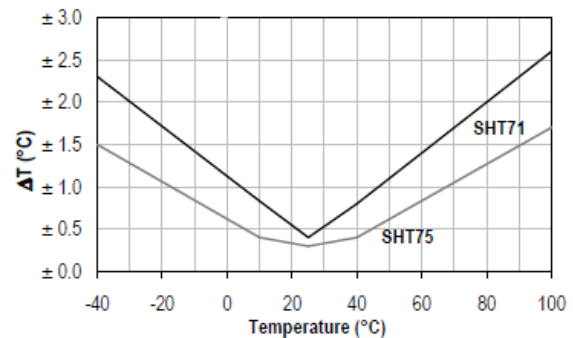Figure 2: Maximal RH-tolerance at 25°C per sensor type.

Figure 3: Maximal T-tolerance per sensor type.

The specification is subject to change without notice.

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Detailed information can be found on www.wisensys.com