SOLID Humidity Sensor

Table of Contents

version history

version : 20161117 V1.2 layout version used for PCB production
Last saved date : 13 Jan 2017 17:33:12
version : 20161117 V1.0 initial version of schematic and board layout
not yet for production (

version nov 2016 V0.1 version without layout. not documented

introduction

In this folder you find information for the assemblage the humidity sensor circuit for the SOLID scientific project.

The PCB is created by the Eagle software form CADSoft (Autodesk)

This project is related to the SOLID temperature sensor.

Dimension of the board is ~ 11.5 x 16.5 mm

On the board there is a voltage regulator but normally is not used and the resistor R1 of 0 ohm has to be mounted.
In that case the max voltage is 3.6 V . But nominal 3.3 V.
In case the LDO is used the max voltage is 5.5 V. But the I2C lines are still between 3.3 and 0 V.

There are no pull ups on the I2C line. Standard is 100 kHz I2C bus.

The address is BE read , BF write

For more details see the data sheet of the humidity sensor in the doc directory

The connector used is of the family micro-match 6 sockets . The corresponding wire pin connector is 7-215083-6 (Farnell[1] order code 149068)

1 Mouser is in general cheaper in big quantities

If only 4 wires are connected it is also possible to place the the 7-188275-4 (Farnell 3784710) , 4 pins socket . Same as used for the SiPm board.

7-215083-4 (Farnell 149032)

technical contact information:

W. Beaumont Universiteit Antwerpen
wim.beaumont@uantwerpen.be
office phone 0032 3 256 3558 , in case of no answer please drop an e-mail

Commercial contact information:

Design sources / info

- SOLID_HSENSOR_sch.pdf SOLID_HSENSOR_brd.pdf pdf files of the design.
- SOLID_HSENSOR_info.odt this file.
- SOLID_HSENSOR_info.pdf this file in pdf format
- SOLID_HSENSOR_bom.csv/ods bill of material
- diretory doc : data sheet .

Status

PCB

The PCB was submitted together with the T-Sensor board on 1 PCB layout.
For more details see SOLID_TSensor info.

It turned out that the foot -print for the temperature sensor was mirrored. The lib that was taken from the web was not checked.
Still one sensor was placed (with the housing to the PCB) and connected with wires. This is not a very reliable method.
Still it was possible to operate the sensor so there are no mistake in the schematic. (only the version without the regulator is tested)

A new layout version with the correct food-print of the HTS221 sensor is ready. It has the same dimensions but the components are mirrored in respect to the connetor.

Software

A class to readout the hts221 board exist:
https://developer.mbed.org/users/wbeaumont/code/HTS221tst/

Tested is the readout of the temperature and the humidity as well the chip ID.