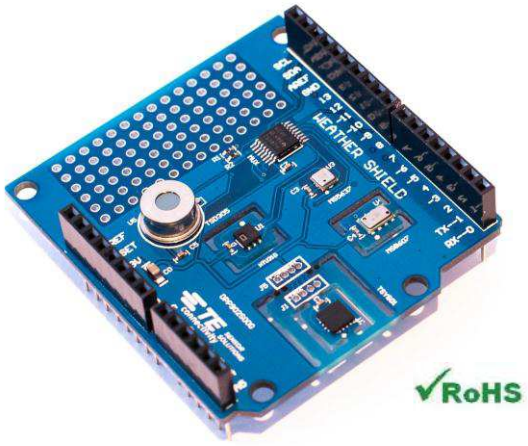



# MEAS WEATHER SHIELD FOR ARDUINO/Genuino MOTHER BOARD

Digital Humidity Sensor
Digital Pressure Sensor
Digital Temperature Sensor
Digital Humidity and Pressure Sensor
Digital Thermopile Sensor

## General Description

The MEAS weather shield for ARDUINO/Genuino mother board provides the necessary hardware to interface the HTU21D digital relative humidity sensor; MS5637 digital barometric pressure sensor; temperature system sensor (TSYS01); MS8607 digital relative humidity and digital pressure sensor; TSD305-1C55 digital thermopile sensor, all from TE Connectivity (TE) to any system that utilizes ARDUINO/Genuino mother board compatible expansion ports configurable for $I^2C$ communication.

The HTU21D sensor is a self-contained humidity and temperature sensor that is fully calibrated during manufacturing. The sensor can operate from 1.5V to 3.6V, has selectable resolution, low battery detect, and checksum capability. The HTU21D has a low power stand-by mode for power-sensitive applications.

The MS5637 sensor is a self-contained pressure and temperature sensor that is fully calibrated during manufacturing. The sensor can operate from 1.5V to 3.6V. The sensor module includes a high-linearity pressure sensor and an ultra-low power 24 bit _Σ ADC with internal factory-calibrated coefficients.

The Temperature System Sensor (TSYS)01 series is a self-contained temperature sensor that is fully calibrated during manufacturing. The sensor can operate from 2.2V to 3.6V. The TSYS01 has a low power stand-by mode for power-sensitive applications.

The MS8607 sensor is a self-contained pressure, humidity and temperature sensor that is fully calibrated during manufacturing. The sensor can operate from 1.5V to 3.6V. The MS8607 is ideal for weather station applications embedded into compact devices and any applications in which pressure, humidity and temperature monitoring is required.

The TSD305-1C55 is a contactless temperature measurement system located in a TO5 package. The TSD includes an infrared sensor (thermopile) and a sensor signal conditioner.

## Specifications

### HTU21D

- Measures relative humidity from 0% to 100%
- Measures temperature from -40°C to 125°C
- $I^2C$ communication
- Fully calibrated
- Fast response time
- Selectable resolution 8-12 bit resolution for humidity; 11-14 bit resolution for temperature)
- Very low power consumption

### MS5637

- Measures pressure from 300 mbar to 1200 mbar
- Measures temperature from -40°C to 125°C
- $I^2C$ communication
- Fully calibrated
- Fast response time
- Very low power consumption

### MS8607

- Operating pressure range: 300 to 1200 mbar
- Measures relative humidity from 0% to 100%
- Measures temperature from -40°C to 125°C
- Extended pressure range 10 to 2000 mbar
- Fast response time
- $I^2C$ communication
- Very low power consumption

### TSYS01

- Measures temperature from -40°C to 125°C
- $I^2C$ communication
- Fully calibrated
- Fast response time
- Very low power consumption
- 24/16 bit resolution for temperature

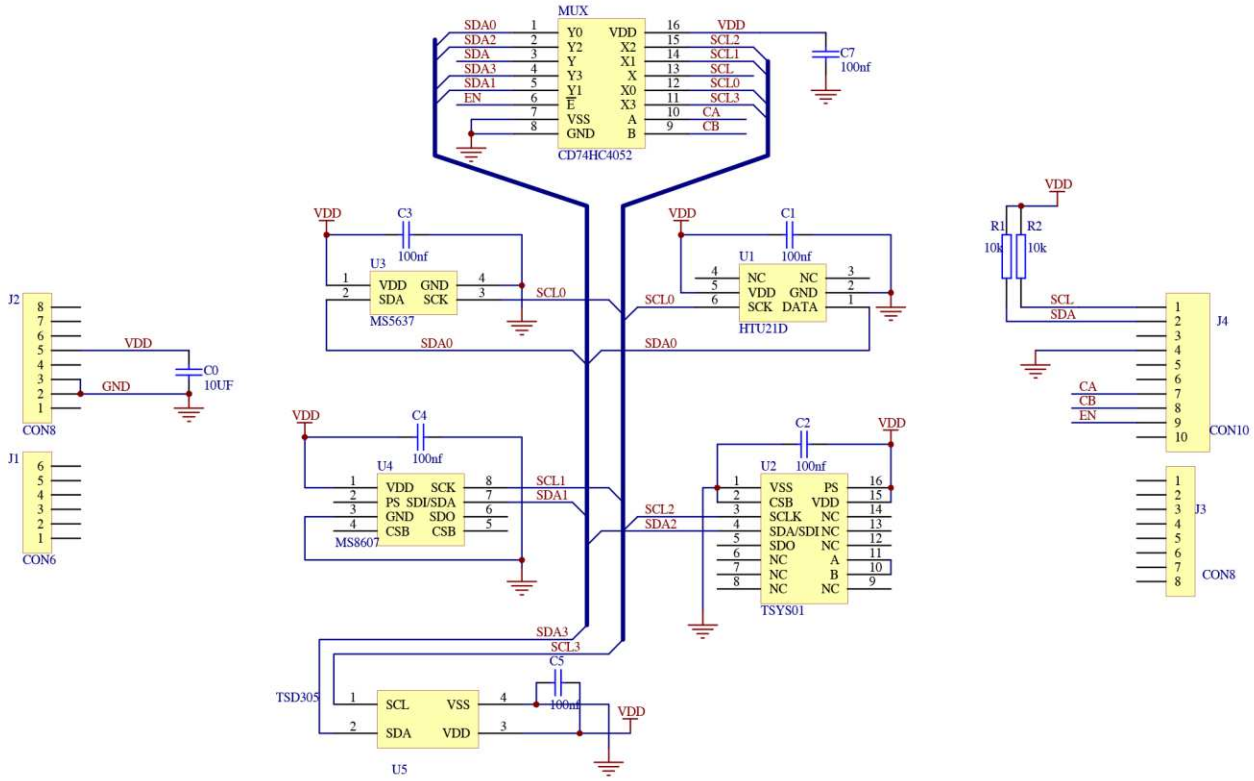
### TSD305-1C55

- Measures temperature from 0°C to 100°C
- $I^2C$ communication
- Contactless temperature measurement
- Fully calibrated
- Up to ±1°C accuracy
- Operating Temperature Range: -10°C … +85°C
- Low current consumption

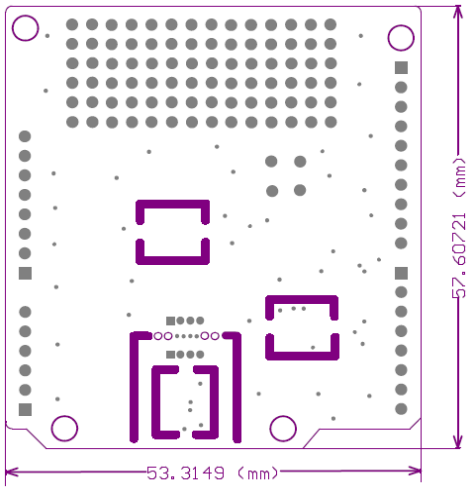
## Performance

- 0% to 100% relative humidity range (HTU21D sensor)
- Operating pressure range: 300 to 1200 mbar (MS5637 sensor)
- Operating pressure range: 300 to 1200 mbar and 0% to 100% relative humidity range at the same time (MS8607 sensor))
- Measures temperature from -40°C to 125°C, accuracy from 0.1°C to 0.5°C (TSYS0101 sensor)
- Contactless temperature measurement from 0°C to 100°C (TSD305-1C55)
- Compatible with the ARDUINO/Genuino setting

## Schematic




## Dimensions (mm)



## Detailed Description

**Standard Interface for the weather shield:**
The Weather shield can interface to the host with standard ARDUINO/Genuino definition, It has standard connector can plug on the ARDUINO/Genuino motherboard.

**TSYS01 sensor can pick off from the weather shield:**
The TSYS01 sensor can pick off from the board, there are only small connection from the board with the TSYS01 sensor (with small PCB), the sensor with small PCB can be cut off from the main weather PCB, then solder four wires to connect the sensor board and the weather board.

**External sensor or other model can be soldered on the weather shield:**
There are 64 plug holes pads can be used for soldering external devices, then plug on the mother board for the testing.

## Reference Material

Detailed information regarding operation of the IC:

- HTU21D Datasheet
- MS5637 Datasheet
- TSYS01 datasheet
- MS8607 Datasheet
- TSD305-1C55 Datasheet

Example source code available on Github.

## Ordering Information

| Description | Part Number |
|---|---|
| MEAS Weather Shield for ARDUINO/Genuino Motherboard | DPP902S000 |

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