



# WEARIC

## WEARIC - TEXTILE WETNESS SENSOR DATASHEET

### PRODUCT DESCRIPTION

The WEARIC textile wetness sensor detects small amounts of water or other liquids and ice on a substrate. The sensor textile is a very thin and breathable conductive circuite which can be easily integrated into every application. The sensor changes the electrical resistance when a liquid is applied on the sensor. A big advantage of this textile sensor is that the fabric absorbs and spread liquids very good and the conductive material in the middle of the sensor is very flexible - perfect for wearables and smart textiles applications. With 15mm press fasteners it is possible to connect your electronics fast and easy with the sensor. You only have to connect a a voltage divider between the sensor and the  $\mu\text{C}$  or you use the WEARIC expansion board to get unlimited possibilities - Do it!



### APPLICATIONS

wearables, smart home, plants, leakage, bed, baby, chair, games

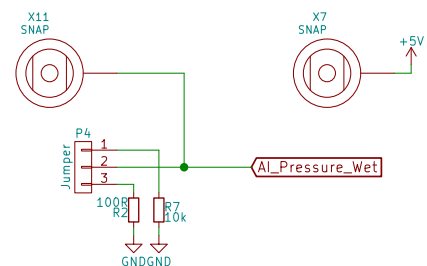
### TECHNICAL DETAILS EXPANSION BOARD

Size	180 x 90mm
Thickness	1,25mm
Connectors	2 Snaps (15mm s-spring)
Sensing Area	100 x 100mm
Resitance Range	1k - 1M $\Omega$
Liquid amount	0,5 - 10ml
Textile Material	Cotton, Stainless steel yarn
Measurment Circuit	voltage divider
Washability	limited washability

### COMPATIBILITY WEARIC EXPANSION BOARD

Value ADU	0 - 1023
Jumper	P4: right position
Resistance voltage divider (Rx)	10k $\Omega$

### CIRCUIT DIAGRAM

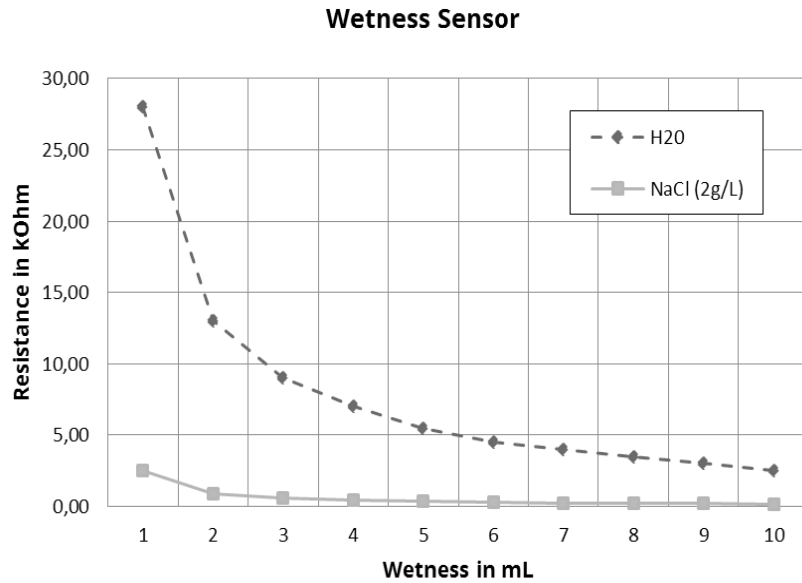


Calculation voltage divider:

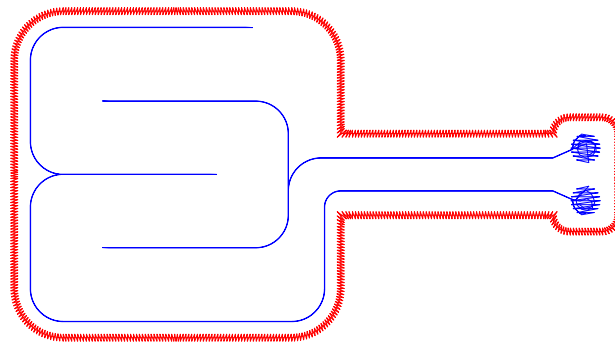
$$U_x = \frac{(U_g \cdot R_x)}{(R_1 + R_x)}$$

## CHARACTERISTIC CURVE

The graph below illustrates how resistance changes when water is applied on the sensor to roughly asses the characteristics of the sensor. Note: the sensor behaves different to salt concentration in liquids. The higher the salt concentration - the lower the resistance.



## SENSOR SCHEME



## DOWNLOADS

More informations, datasheets, PCB Layout, circuit diagrams, etc. you can find them in our download section on [www.wearic.com](http://www.wearic.com)

## USED MATERIALS

You want to build your individual Smart Textile sensor? You need the following materials which are easily accesible in our Online-Shop:

Item	Item Nr.
Cotton fabric	WRC103
Stainless Steel Yarn	WRC023
15mm snap incl. tooling	WRC024