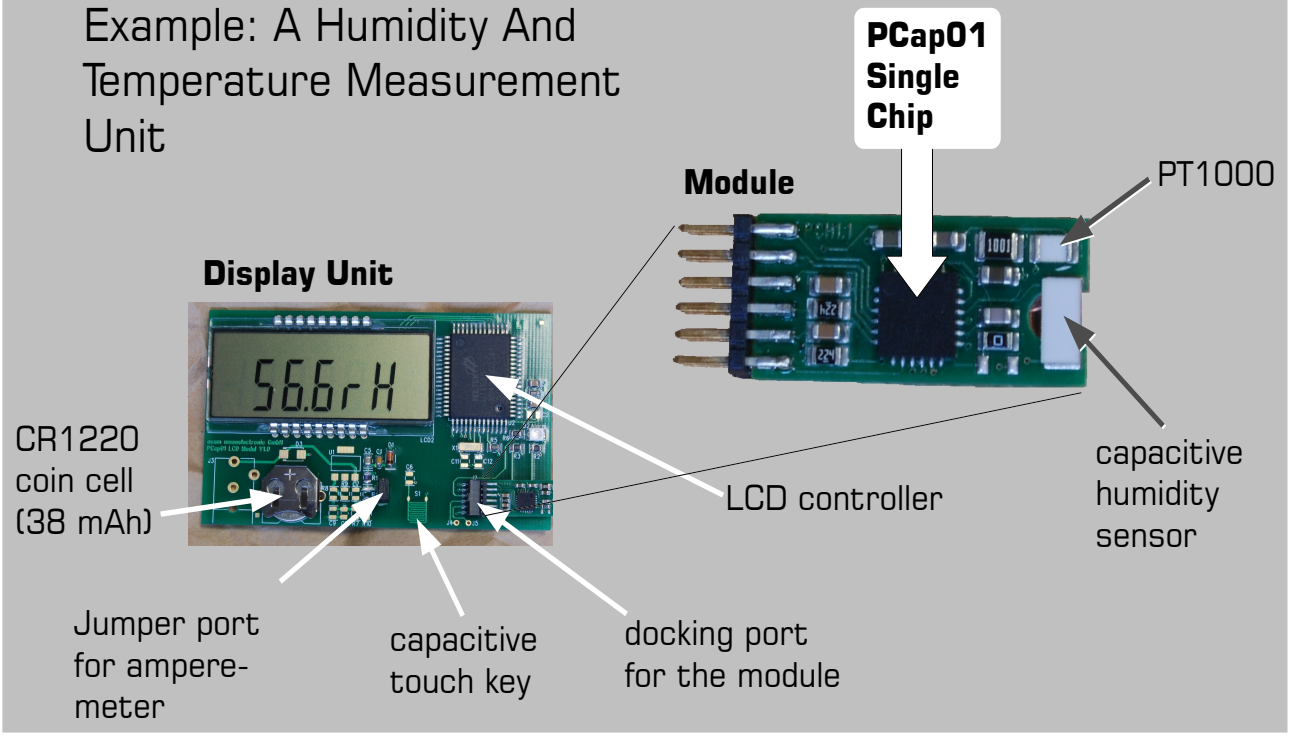
Demonstrator For PCap01 Single Chip Solutions Example: A Humidity And Temperature Measurement Unit



Getting Started

1) Remove the jumper;
2) Insert coin cell, respect polarity;
3) Insert module at docking port;
4) Put jumper back to its place.

Should the system fail to start, remove the jumper again, wait for some minutes so that internal capacitances lose their charge. Jumper back in place then provokes a Power-Up-Reset.

Capacitive Touch Key, Display Cycle

Close to the jumper there is a capacitive touch meander. Putting a finger on it makes the display go through the following cycle : Humidity display (in percent RH), Temperature display (in centigrades), blank display.

Current drain

An ampere meter may be connected in place of the jumper:

Current drain	9 µA

with approx. 2 µA for LCD and display-controller included (cannot be put to idle state in the present release). In this configuration, the coin cell lifetime spans over ½ year of non-stop operation.

Characteristics

	Speed	Resolution peak-to-peak (6 sigma)
Humidity	5 Hz	0.05 % RH
Tempe-rature	1 Hz	30 mK

The PCap01 as a Versatile Single Chip

PCap01 is practically alone to operate the whole application, encompassing:

1) Work flow, including touch key cycle;
2) Generation and A/D conversion of sensor signals (“front end“);
3) Linearization (polynomial), which means conversion of picofarads into percent RH;
4) Serial interface emulation for sending data to the interface controller.

Further Evaluation

For your own evaluation, the module may quit the display unit and be connected to a desktop or laptop PC via a dedicated programmer (acam-PicoProg V2). An evaluation software (GUI) is available under Windows®