Note about bypass capacitors: 47 nF ceramic capacitors will do just as well as 100 nF ones. BFM, Cl-C2 do not really do anything, since RC is just 147 Ohm * C = something like 10 microseconds.

TLC339I is a quadruple micropower low offset comparator. Its positive input is in the discriminator threshold voltage set by the 33mV precision resistor R1 and biased by point to feedback resistor R4. Its negative input is tied to the voltage drop across 150 Ohm resistor on the GND adapter card. The input to output is protected from negative voltages by high-resistive transistor R2.

Comparator outputs are normally high (+5 V).

Resistor 2 and 3 are 1% 1/8W metal film.

D8140 is a hexagonal inverter gate (16 mA LLOCC, 8.4 mA SLLOC)

D8145 is a dual 4-NAND 50 Ohm line driver (60 mA LLOCC, 48 mA SLLOC).

D8142 is a quadruple NOR gate.

LEDs 2 and 3 are PCB-constructable 74LX181F series, set to 10 mA.

LEDs 8 and 9 are large LEDs diffused low, circa 25 mA.

Outputs A, C, E of D8144 are normally low

Outputs B, D, F of D8144 are normally low

Outputs of U1A and U1B are normally low

Outputs of U3A are normally high

Output of U7B is normally high

Output of U7C is normally high

Output of U8C is normally high

Non-normal values mean humidity above threshold.

Unfortunately, there is a similarity on the R1 and R2 lines and capacitors on a 5th-pitch edge of the single board. We will therefore move all small LEDs (e.g. blue, red, white, green) and all large LEDs (33mV, 150 Ohm) on to the extension board. The extension board can be connected via a 24-pin J tag cable supplying power to the 1-2-4-8 wires 21-24 for 30s and comparator outputs (wires 7-10). Wires 5/6/10/20 are currently reserved.