

DT01 400-THERMOCOUPLE THERMOPILE

The DT01 is a thermopile sensor incorporated in a plastic ribbon. It is particularly suitable for making prototype instrumentation like calorimeters, heat flux sensors, thermal properties measurement equipment and laser power meters.

DT01 was originally designed for prototyping of Hukseflux heat flux sensors. The design is made to be sensitive and easy to handle. DT01 can be used both to construct heat flux sensors as well as differential temperature sensors. The materials used in the DT01 thermopile are copper and copper-nickel (CuNi) alloy. The copper part however is actually consisting of copper plated CuNi. Because the copper conductivity dominates, the copper plated CuNi practically behaves like copper. The total sensor is extremely stable.

Typical applications of DT01 are prototyping of calorimeters and thermal conductivity measurement equipment. The ribbon can either be spread out across a surface or be rolled up to create a small sensitive area. A typical way of installing is by laying DT01 into a groove, and using a plastic casting material to fill up the space to create a solid sensor.

For readout one only needs an accurate voltmeter that works in the millivolt range. To convert the measured voltage to a heat flux or differential temperature, the voltage must be divided by the calibration constant. This constant can only be determined once the sensor is built-in. Please consult Hukseflux for further engineering considerations.

SUGGESTED USE

Prototyping of heat flux sensors, calorimeters, flow meters, radiation sensors, thermal conductivity sensors, laser power meters, flow sensors etc.

DT01 SPECIFICATIONS

Sensitivity (nominal):	1,5 mV/ °C
Resistance (nominal):	200 Ω
Temperature range:	-50 to +120 °C
Bending radius:	0.5 mm min
Folding:	one time folding is allowed

OPTIONS

Depending on the application, amplifiers AC100 or NAM01 are used.

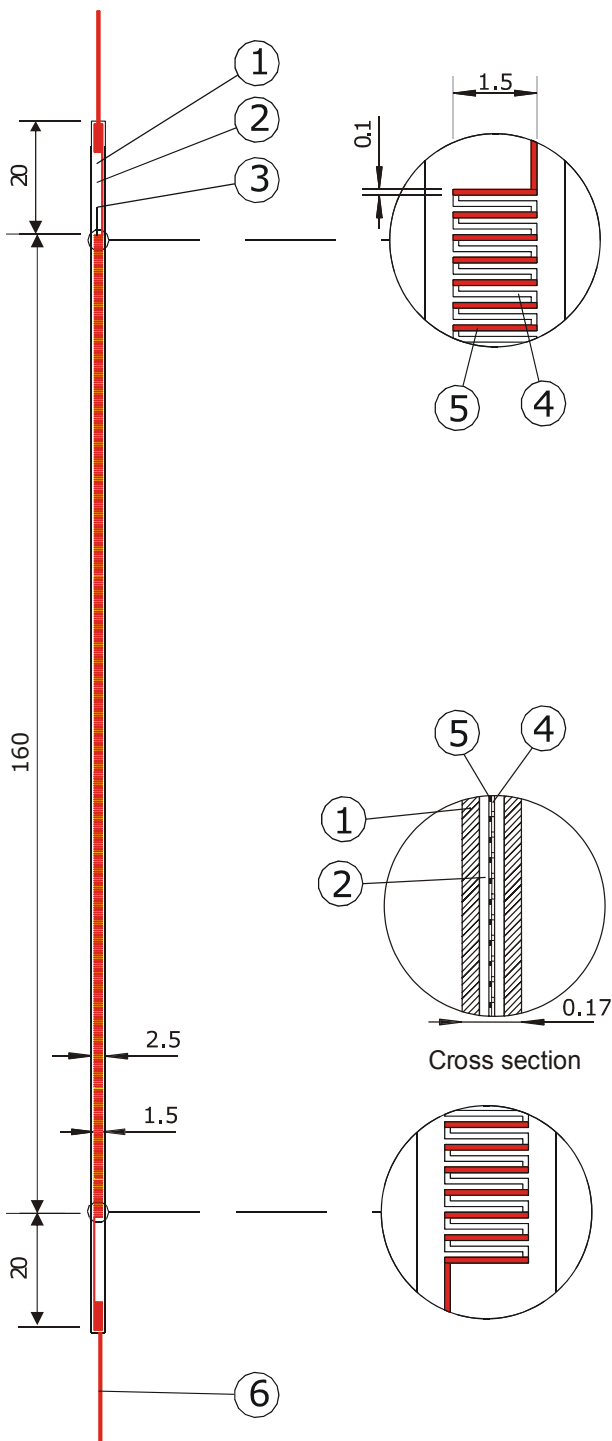


Figure 1 DT01 thermopile. Kapton laminate (1), acrylic glue (2), thermopile sensor (3), copper-nickel (CuNi) alloy (4) and copper plated constantane (5), copper leads (6). Dimensions in mm.