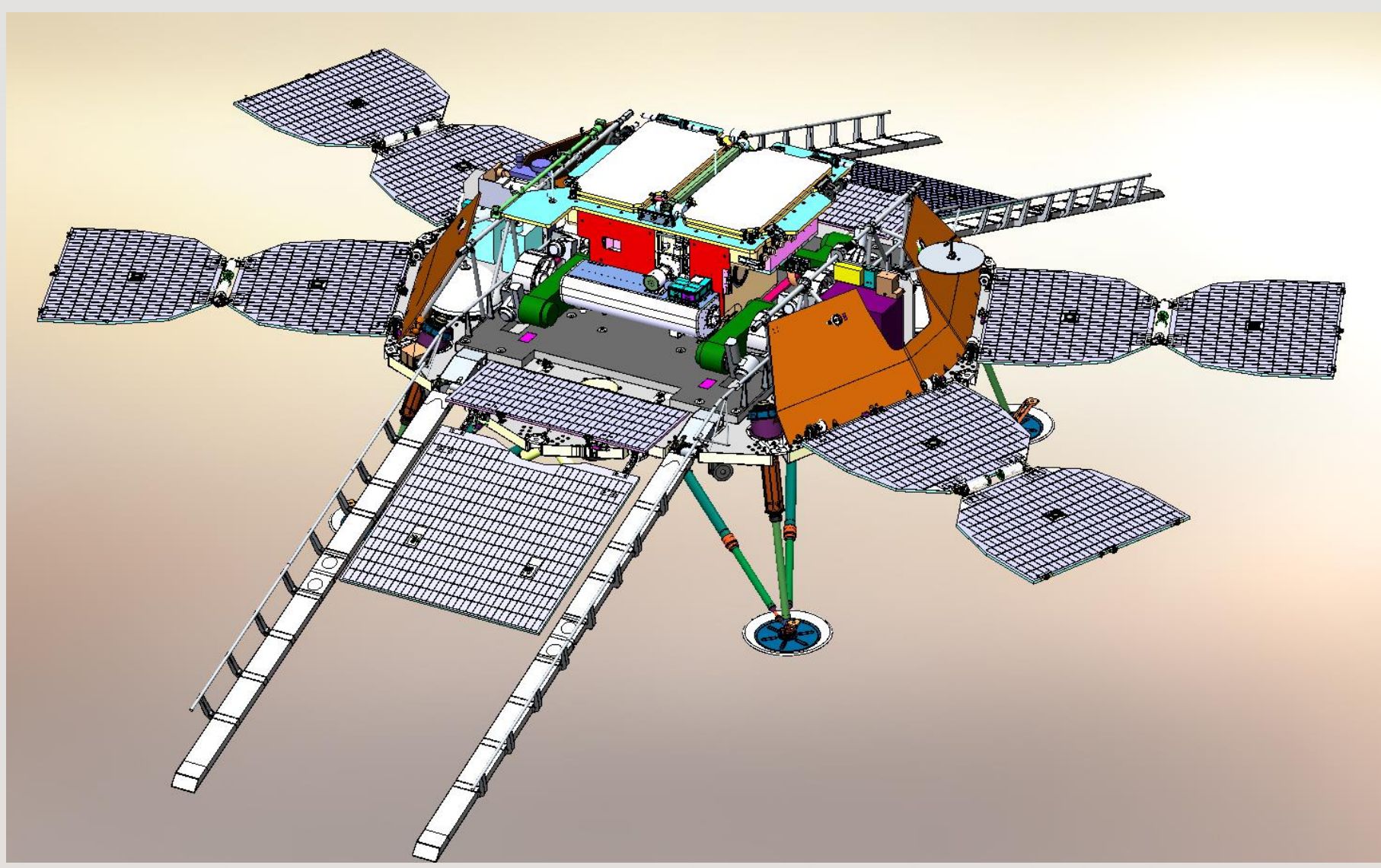


METEO-P/H: Measuring ambient pressure and relative humidity on the ExoMars 2020 landing site

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The Russian (Roscosmos/IKI) built Surface Platform delivers the ESA rover on Mars and hosts a suite of Russian and European science investigations (Credit: Roscosmos/Lavochkin/IKI)

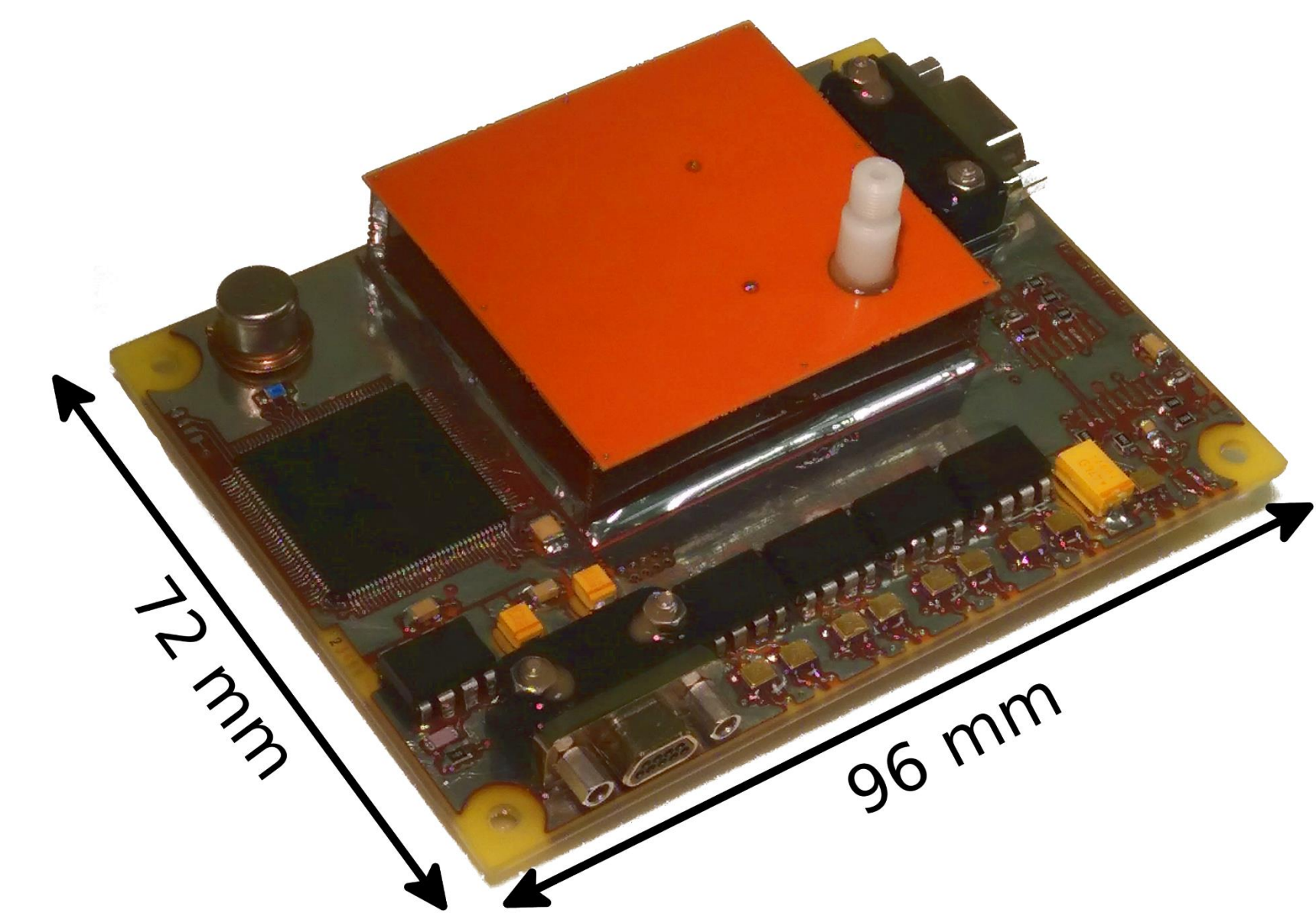
The Finnish Meteorological Institute (FMI) supplies pressure and relative humidity measurement devices (METEO-P/H) for the Surface Platform element of the ExoMars 2020 lander. The devices are part of the Russian (IKI) led METEO meteorological instrument package

A. METEO-P

The METEO-P miniature pressure device is installed inside the ExoMars Surface Platform warm compartment and has access to the outside ambient pressure through a dedicated tube. An instrument controller on the METEO-P board controls both METEO-P and METEO-H measurements and connects the devices to the METEO Central Electronics Unit.

METEO-P specifications:

- Based on capacitive Vaisala Barocap® sensors
- Approximate mass 100 g
- Accuracy: ± 20 Pa from 1-400 Pa and ± 10 Pa from 400-1200 Pa
- Resolution: ≤ 0.5 Pa
- Operational temperature range: -45 °C to $+55$ °C
- Response time: ≤ 1 s



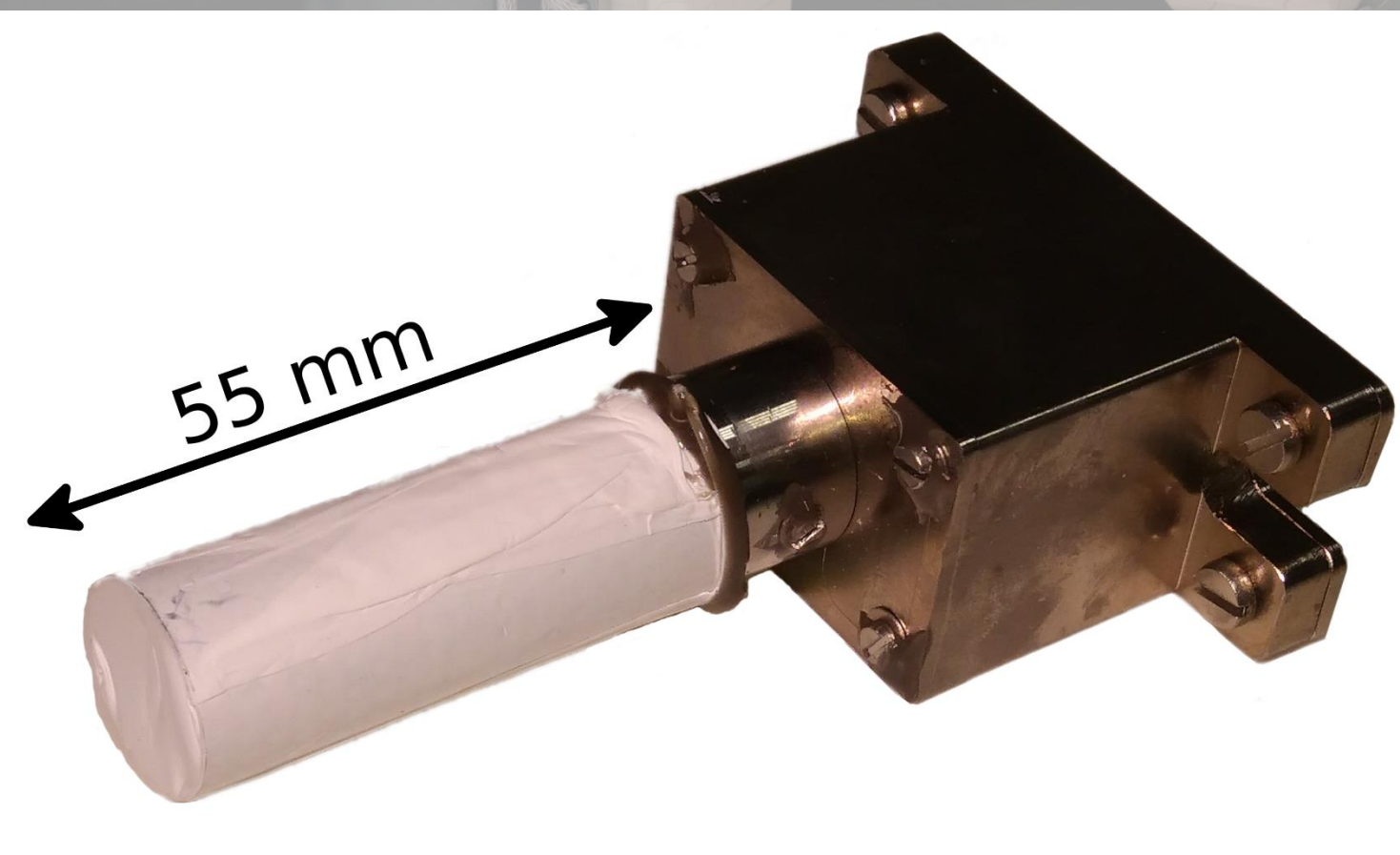
METEO-P humidity device STM

B. METEO-H

The METEO-H miniature humidity device is in direct contact with the Martian atmosphere through installation on the meteorological mast of the ExoMars Surface Platform.

METEO-H specifications:

- Based on capacitive Vaisala Barocap® sensors
- Approximate mass 45 g
- Measurement range: 0-100 % RH in temperatures from -83 °C to -3 °C
- Accuracy: ± 10 % RH in temperatures greater than -70 °C, and ± 20 % RH in -83 °C to -70 °C
- Resolution: ≤ 1 % over a Mars temperature range of -83 °C to -3 °C
- Operational temperature range: -128 °C to $+50$ °C (calibration down to -80 °C only)
- Response time: 30 min for temperatures above -70 °C



METEO-H humidity device STM

METEO-P/H continues the long time series in-situ studies of Martian atmospheric pressure and humidity. The measurement device utilizes well-established technology from past FMI Mars missions, while improving the design based on lessons learned.