Christian-Albrechts-Universität zu Kiel	**Solar Orbiter EPD Energetic Particles Detector RFW/RFD**	Number: SO-EPD-KIE-RD-0019 Issue: 1.1 Date: 09.05.2016

Business Agreement: N/A Order: N/A	**Classification: Minor**
Originator site: CAU – Kiel (D)	
Item designation: N/A	**Model: PFM, FM**
	S/N: N/A
Affected item(s): EPT-HET and STEP	**Affected document(s): Experiment Interface Document-Part A (EID-A), Issue 5. SOL.EST.RCD.0050**

Short Description:

Non-compliance with ***EIDA R-759 and EIDA R-760:***

EIDA R-759: *The PI shall, for thermally insulated units, procure, install at the URP location and test 1 thermistor to be used for the monitoring of the thermally insulated units, when operating.*
EIDA R-760: *The PI shall, for thermally insulated units, acquire and provide the URP temperature in HK telemetry.*

The only thermistors located on the URP are the three survival thermistors which are read by the S/C. The URP temperature cannot be monitored by the unit itself and hence its data cannot be part of the unit HK data.

Detailed Description:

Please see Annex A. (clarifications added after email received from Kristin Wirth on 31.03.2016 and email received from Claudio Damasio on 29.04.2016).

Reason for Request:

During EPD-IQR co-location meeting at ESTEC on 17.02.2016, we advised to raise this RFD for as reference to this non-compliance in the VCM.

Adverse Effects: N/A

PRESENTING INSTITUTION

Engineering	PA	PM	PI
Ravanbakhsh	Michael L. Richards		
Ali Ravanbakhsh	**Michael Richards**	**César Martín**	**Robert Wimmer**

CONSORTIUM

SE	PA	EM	PI

ESA APPROVAL

Engineering	PA	PM	PI

Annex A: **Detailed Description**

Due to the constraints of the URP positons which is outside the unit box, the only thermistors located on the URP are the survival thermistors controlled by S/C. So, the URP temperature cannot be monitored by the instrument itself.

Never the less, there are several internal thermistors inside each unit on the electronic boards and important subassemblies like detectors packages. The exact position of these internal temperature sensors are in the following references (thermal balance test reports for PQMs):

- SO-EPD-KIE-TR-0013_iss1_rev0_EPT-HET-PQM-TBT-test-report.pdf
- SO-EPD-KIE-TR-0021_iss1_rev0_STEP-PQM-TBT-test-report.pdf

The position of temperature sensors will be the same for FM/PFM models.

For each of EPT-HET-1 or 2, there are 8 thermistors.

For STEP there are 8 internal temperature monitoring locations.

After finalizing the correlated TMM, for each thermal case, there will be a table showing the temperature of the internal parts and the URP temperature.

Also, a correlated RTMM will be provided to ESA.

In the final correlated thermal test report, a table will be provided for each thermal case including the URP temperature as well as internal temperature sensors. This table enables the reviewers for post-launch analysis of the URP temperatures of the unit based on the internal temperatures which are received via HK data.

Please note that after launch, we do have in our HK data at least one temperature which its location will be finalized after the final software/telemetry developments; this will be communicated with ESA accordingly.