GP Temperature Version 1.2

Expression 3: typical adjustment (K → K)

Presentation of the different Good Practice (GP) expressions:

1. simplified (K → K)
2. typical (K → K)
3. typical_adjustment (K → K)
4. resistance (K → Ω)
5. extensive (K → K)

The GP examples are formulated very generally and the numerical values given are arbitrary. The calibration laboratory must decide for itself whether all requirements for the representation of the calibration result are covered with these GP examples.

It cannot be deduced from the GP examples that they fulfil all requirements vis-à-vis third parties (e.g. to the needs of the customer). This must be agreed with the third party. In the same way, the creator of the DCC must ensure that the framework conditions given to him remain fulfilled.

Conformity statements are an essential part in factory calibrations. They generally do not occur in calibration certificates from national metrological state institutes. The DCC serves all representations of calibration results. Thus, the calibration laboratory must decide whether or not to include conformity statements. Therefore, conformity statements are optional in the DCC scheme.

Calibration certificates typically contain important text passages. Without these text passages, the certificate is of little or no significance. In this document, the text passages were deliberately omitted because the text passages are very individual and therefore cannot be reproduced here. The text passages reproduced in the XML files are also exemplary and must therefore be adapted by the user.

The page with the administrative data - with exception of the statements - is not dealt with here.

With the specifications 1, 2, 3 and 5, the temperature value on the calibration object is read during calibration. With specification 4 (resistance), the resistance of the calibration object is measured.

We would like to point out that the characteristics are intended to illustrate the variability of the GP temperature. Thus - depending on the calibration activity - the resistance can be measured on the calibration object or the temperature can be measured via an indicator. We see it as the task of the corresponding DKD technical committee to further develop this first draft for GP examples. The DCC team of PTB will be pleased to provide advice.

administrativeData

statements

statement

The results refer only to the object calibrated in this DCC. The measurement results are valid at the time of calibration. The applicant is responsible for arranging a recalibration in due time.
ISO/IEC 17025:2018-03 7.8.4.3

statement refType="basic_validityRange"

Lower limit: 306 K

Upper limit: 593 K

statement refType="basic_conformity"

The conformity statement is made on the basis of the customer's specifications. They are listed in the DCC.
Determination by "Customer GmbH"

PASS

statement refType="basic_recalibration"

Date when the calibration item is to be recalibrated at the latest after specification by the customer: 1959-10-22

Determination by "Customer GmbH"

measurementResults measurementResult

usedMethods

usedMethod refType="basic_uncertainty"

Expanded measurement uncertainty **....**
GUM

usedMethod refType="gp_temperatureSensor"

Calibration of temperature sensors: …
DKD-R 5-1:2018

measuringEquipments

measuringEquipment refType="basic_normalUsed"

Description Pt 100 resistance thermometer: …
Serial number, …

influenceConditions

influenceCondition refType="gp_immersionDepth"

Immersion depth: …
0.1 m

influenceCondition refType="basic_temperature"

Ambient condition temperature: … 293 – 299 K

influenceCondition refType="basic_huminidyRelative"

Ambient condition relative humidity: … 0.2 – 0.7

influenceCondition refType="basic_adjustment"

<dcc:status>beforeAdjustment</dcc:status>

Adjustment

data refType="gp_table1"

refType_area1	basic_referenceValue	
	Reference value / K	Calibration value / K
refType_area2		basic_calibrationValue
refType_area3		
	306.245	306
	373.127	373
	448.249	448
	523.321	523
	593.151	593

Table continued …

refType_area1	basic_measuredValue	basic_measurementError				
	Measured value/ K	Measurement error / K	U (Measurement error)			
refType_area2			/ K			
refType_area3						
	306.35	0.105	0.89	2	0.95	normal
	373.45	0.323	0.89	2	0.95	normal
	448.05	-0.199	0.89	2	0.95	normal
	523.05	-0.271	0.89	2	0.95	normal
	593.35	0.199	0.89	2	0.95	normal

Table continued …

reftype_area1	basic_measurementError		
		Lower acceptance limit / K	Upper acceptance limit / K
refType_area2	basic_conformity		
refType_area3		basic_ acceptanceLimitLower	basic_ acceptanceLimitUpper
	pass	-0.75	0.75
	pass	-0.75	0.75
	pass	-0.75	0.75
	pass	-0.90	0.90
	pass	-0.90	0.90

results

result refType="gp_measuringResult1"

Measuring results

data refType="gp_table2"

refType_area1	basic_referenceValue	
	Reference value / K	Calibration value / K
refType_area2		basic_calibrationValue
refType_area3		
	306.248	306
	373.121	373
	448.253	448
	523.319	523
	593.154	593

Table continued …

refType_area1	basic_measuredValue	basic_measurementError				
	Measured value/ K	Measurement error / K	U (Measurement error)			
refType_area2			/ K			
refType_area3						
	306.32	0.072	0.061	2	0.95	normal
	373.21	0.089	0.061	2	0.95	normal
	448.36	0.107	0.061	2	0.95	normal
	523.31	-0.009	0.061	2	0.95	normal
	593.07	-0.084	0.061	2	0.95	normal

Table continued …

reftype_area1	basic_measurementError		
		Lower acceptance limit / K	Upper acceptance limit / K
refType_area2	basic_conformity		
refType_area3		basic_ acceptanceLimitLower	basic_ acceptanceLimitUpper
	pass	-0.23	0.23
	pass	-0.23	0.23
	pass	-0.23	0.23
	pass	-0.30	0.30
	pass	-0.30	0.30