

	Catatan Hasil Kalibrasi Internal <i>Internal Calibration Record</i> Thermocouple of Vessel	No. : F-PM-01-43
		Rev. : 00
		Date : 3 September 2014

Merek : Brand	Bidang / Lokasi : Department / Location
Model/Tipe : Model/Type	Suhu ruang : °C Room temp.
No. Seri : Serial no.	Kelembaban : %RH Humidity
Kode kalibrasi : Calibration code	No Protap : SOP No.
Kapasitas : °C Capacity	Petugas : Operator
Resolusi alat : °C Resolution	Tanggal kalibrasi : Calibration date

Kalibrator yang digunakan Reference used	Kode Code	Tanggal kalibrasi Kalibrator Cal. date of Calibrator

Note: Persamaan matematik untuk koreksi suhu : $y = 0,000124x^2 + 0,967979x + 2,378922$

Math equation for temperature correction

A. Data

1. $T_{\text{Nominal}} = 30 \text{ } ^\circ\text{C}$

No.	T_{Std} T_{Ref} (°C)	$T_{\text{Std}} + \text{koreksi}$ $T_{\text{Ref}} + \text{Corr}$ (°C)	T_{Alat} T_{Reading} (°C)	Koreksi Correction (°C)
1				
2				
3				
4				
5				
Rata-rata / Average		#DIV/0!	#DIV/0!	#DIV/0!
σ_{n-1}		#DIV/0!		#DIV/0!

2. $T_{\text{Nominal}} = 75 \text{ } ^\circ\text{C}$

No.	T_{Std} T_{Ref} (°C)	$T_{\text{Std}} + \text{koreksi}$ $T_{\text{Ref}} + \text{Corr}$ (°C)	T_{Alat} T_{Reading} (°C)	Koreksi Correction (°C)
1				
2				
3				
4				
5				
Rata-rata / Average		#DIV/0!	#DIV/0!	#DIV/0!
σ_{n-1}		#DIV/0!		#DIV/0!

3. $T_{\text{Nominal}} = 100 \text{ } ^\circ\text{C}$

No.	T_{Std} T_{Ref} (°C)	$T_{\text{Std}} + \text{koreksi}$ $T_{\text{Ref}} + \text{Corr}$ (°C)	T_{Alat} T_{Reading} (°C)	Koreksi Correction (°C)
1				
2				
3				
4				
5				
Rata-rata / Average		#DIV/0!	#DIV/0!	#DIV/0!
σ_{n-1}		#DIV/0!		#DIV/0!

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B. Perhitungan Ketidakpastian Pengukuran*Calculation of Measurement Uncertainty*1. $T_{\text{Nominal}} = 30 \text{ } ^\circ\text{C}$

No. No.	Sumber Ketidakpastian Source of Uncertainty	Satuan Unit	Distribusi Distribution	Nilai U_i U_i value	Pembagi Divisor	u_i u_i	Koef., C_i Coeff., C_i	$u_i C_i$ $u_i C_i$	V V
1	Reproducibility, $U_{\text{Rep}} = \sigma_{n-1}$	$^\circ\text{C}$	Normal		$\sqrt{5}$	0.0000	1	0.00000	4
2	Reference Temperature, $U_{\text{Ref}} = U_{\text{sert.}}$	$^\circ\text{C}$	Normal		2	0.0000	1	0.00000	∞
3	Resolution, $U_{\text{Res}} = \frac{1}{2} \text{ Res.}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
4	Temp. medium homogeneity, $U_{\text{Unif}} = \sigma_{n-1}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
5	Drift, $U_{\text{Drift}} = 10\% \times U_{95\%}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
Ketidakpastian baku gabungan / Sum of Uncertainty, $u(D) = \text{SQRT}(\sum (u_i C_i)^2)$								0.000	
Derajat kebebasan efektif / Effective degree of freedom, V_{eff}								#DIV/0!	
Faktor cakupan pada tingkat kepercayaan 95 % / Coverage Factor on uncertainty 95%, $K_{95\%}$								2	
Ketidakpastian gabungan perluasan / Advanced Uncertainty, $U(D) = u(D) \times K_{95\%}$, dalam / in $^\circ\text{C}$								0.00	

2. $T_{\text{Nominal}} = 75 \text{ } ^\circ\text{C}$

No. No.	Sumber Ketidakpastian Source of Uncertainty	Satuan Unit	Distribusi Distribution	Nilai U_i U_i value	Pembagi Divisor	u_i u_i	Koef., C_i Coeff., C_i	$u_i C_i$ $u_i C_i$	V V
1	Reproducibility, $U_{\text{Rep}} = \sigma_{n-1}$	$^\circ\text{C}$	Normal		$\sqrt{5}$	0.0000	1	0.00000	4
2	Reference Temperature, $U_{\text{Ref}} = U_{\text{sert.}}$	$^\circ\text{C}$	Normal		2	0.0000	1	0.00000	∞
3	Resolution, $U_{\text{Res}} = \frac{1}{2} \text{ Res.}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
4	Temp. medium homogeneity, $U_{\text{Unif}} = \sigma_{n-1}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
5	Drift, $U_{\text{Drift}} = 10\% \times U_{95\%}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
Ketidakpastian baku gabungan / Sum of Uncertainty, $u(D) = \text{SQRT}(\sum (u_i C_i)^2)$								0.000	
Derajat kebebasan efektif / Effective degree of freedom, V_{eff}								#DIV/0!	
Faktor cakupan pada tingkat kepercayaan 95 % / Coverage Factor on uncertainty 95%, $K_{95\%}$								2	
Ketidakpastian gabungan perluasan / Advanced Uncertainty, $U(D) = u(D) \times K_{95\%}$, dalam / in $^\circ\text{C}$								0.00	

2. $T_{\text{Nominal}} = 100 \text{ } ^\circ\text{C}$

No. No.	Sumber Ketidakpastian Source of Uncertainty	Satuan Unit	Distribusi Distribution	Nilai U_i U_i value	Pembagi Divisor	u_i u_i	Koef., C_i Coeff., C_i	$u_i C_i$ $u_i C_i$	V V
1	Reproducibility, $U_{\text{Rep}} = \sigma_{n-1}$	$^\circ\text{C}$	Normal		$\sqrt{5}$	0.0000	1	0.00000	4
2	Reference Temperature, $U_{\text{Ref}} = U_{\text{sert.}}$	$^\circ\text{C}$	Normal		2	0.0000	1	0.00000	∞
3	Resolution, $U_{\text{Res}} = \frac{1}{2} \text{ Res.}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
4	Temp. medium homogeneity, $U_{\text{Unif}} = \sigma_{n-1}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
5	Drift, $U_{\text{Drift}} = 10\% \times U_{95\%}$	$^\circ\text{C}$	Rectangular		$\sqrt{3}$	0.0000	1	0.00000	∞
Ketidakpastian baku gabungan / Sum of Uncertainty, $u(D) = \text{SQRT}(\sum (u_i C_i)^2)$								0.000	
Derajat kebebasan efektif / Effective degree of freedom, V_{eff}								#DIV/0!	
Faktor cakupan pada tingkat kepercayaan 95 % / Coverage Factor on uncertainty 95%, $K_{95\%}$								2	
Ketidakpastian gabungan perluasan / Advanced Uncertainty, $U(D) = u(D) \times K_{95\%}$, dalam / in $^\circ\text{C}$								0.00	

C. Hasil Kalibrasi*Calibration Results*

No.	Penunjukan Standar Reference ($^\circ\text{C}$)	Penunjukan Alat Test Thermometer ($^\circ\text{C}$)	Koreksi Correction ($^\circ\text{C}$)	Ketidakpastian, $U_{95\%}$ Uncertainty, $U_{95\%}$ ($^\circ\text{C}$)
1				0.00
2				0.00
3				0.00

Dihitung oleh Calculated by	Tanggal Date	Diperiksa oleh Checked by	Tanggal Date	Catatan Note