Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2005
Registration number: **K 065**

of **Thermo Electric Instrumentation B.V.**

This annex is valid from: **30-03-2017** to **01-04-2021** Replaces annex dated: **20-01-2016**

Location(s) where activities are performed under accreditation

Head Office

Coenecoop 71-73
2741 PH
Waddinxveen
Nederland

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks
LF 0 0	DC/LF Electricity			
LF 1 0	DC Voltage			measuring only
	1 μV - 100 mV		$5 \cdot 10^{-6} \cdot U + 2\ \mu V$	
	100 mV - 1 V		$5 \cdot 10^{-6} \cdot U + 2\ \mu V$	
	1 V - 10 V		$5{,}6 \cdot 10^{-6} \cdot U + 1\ \mu V$	
LF 2 0	DC Current			measuring only
	100 μA - 1 mA		$1{,}4 \cdot 10^{-5} \cdot I + 0{,}12\ \mu A$	
	1 mA - 10 mA		$3 \cdot 10^{-5} \cdot I + 0{,}1\ \mu A$	
	10 mA - 50 mA		$8{,}3 \cdot 10^{-5} \cdot I + 0{,}43\ \mu A$	
LF 6 2	DC Resistance			measuring only
	0,01 Ω - 10 Ω		3 mΩ	
	10 Ω - 100 Ω		$1{,}1 \cdot 10^{-5} \cdot R + 2{,}9\ m\Omega$	

This annex has been approved by the Board of the Dutch Accreditation Council, on its behalf,

J.A.W.M. de Haas
Director of Operations

[1] Calibration and Measurement Capability (CMC): Demonstrated measurement uncertainty, with coverage probability of 95%, in a given measurement point or measurement range. Measurement uncertainty, *U*, is calculated according to EA-4/02 "*Evaluation* of the Uncertainty of Measurement in Calibration".

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks
	100 Ω - 1 kΩ		$2{,}9 \cdot 10^{-5} \cdot R$ + 1,1 mΩ	
	1 kΩ - 10 kΩ		$1{,}5 \cdot 10^{-5} \cdot R$ + 15 mΩ	
TE 0 0	Temperature			
	Calibration furnaces and -bathes	-196 ºC to 600 ºC	0,056 ºC	
		600 ºC to 1050 ºC	0,96 ºC	
TE 1 0	Resistance thermometers (Pt100)	- 196 ºC	0,017 ºC	Boiling point of liquid nitrogen
		0 ºC	0,012 ºC	Ice bath
		0,01 ºC	0,0074 ºC	Triple point of water
		26,868 ºC	0,0088 ºC	Triple point of phenoxybenzene
		-80 ºC to -20 ºC	0,046 ºC	
		-20 ºC to 90 ºC	0,048 ºC	
		90 ºC to 200 ºC	0,056 ºC	
		200 ºC to 600 ºC	0,092 ºC	
		600 ºC to 850 ºC	0,82 ºC	
TE 3 0	Thermocouples	-196 ºC	0,082 ºC	Boiling point of liquid nitrogen CMC based on thermocouple type E
		0 ºC	0,05 ºC	Ice bath CMC based on thermocouple type E
		0,01 ºC	0,05 ºC	Triple point of water CMC based on thermocouple type E
		26,868 ºC	0,05 ºC	Triple point of phenoxybenzene CMC based on thermocouple type E

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks
		-80 ºC to 90 ºC	0,07 ºC	CMC based on thermocouple type E
		90 ºC to 200 ºC	0,072 ºC	CMC based on thermocouple type E
		200 ºC to 600 ºC	0,1 ºC	CMC based on thermocouple type E
		600 ºC to 1050 ºC	0,88 ºC	CMC based on thermocouple type J
		1050 ºC to 1500 ºC	3,4 ºC	CMC based on thermocouple type R
TE 4 0	Self Indicating thermometers			
TE 4 1	Self Indicating thermometers, sensors with transmitter (0-20) mA and (4-20) mA	-196 ºC	0,017 ºC	Boiling point of liquid nitrogen
		0 ºC	0,01 ºC	Ice bath
		0,01 ºC	0,004 ºC	Triple point of water
		26,868 ºC	0,0064 ºC	Triple point of phenoxybenzene
		-80 ºC to 90 ºC	0,045 ºC	
		90 ºC to 200 ºC	0,054 ºC	
		200 ºC to 600 ºC	0,088 ºC	
		600 ºC to 1050 ºC	0,9 ºC	
		1050 ºC to 1500 ºC	3,4 ºC	
TE 9 0	Simulators / indicators			
TE 9 2	For the purpose of thermocouples	-200 ºC to 0 ºC	0,1 ºC to 0,07 ºC	CMC based on thermocouple type E
		0 ºC to 1000 ºC	0,07 ºC	CMC based on thermocouple type E

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks
		1000 ºC to 1200 ºC	0,08 ºC	CMC based on thermocouple type E
		1200 ºC to 1372 ºC	0,11 ºC	CMC based on thermocouple type K
		1372 ºC to 1768 ºC	0,35 ºC	CMC based on thermocouple type R
		1768 ºC to 1820 ºC	0,35 ºC	CMC based on thermocouple type B
		-200 ºC to 850 ºC	0,008 ºC to 0,038 ºC	CMC based on Pt100
	Transmitters	-200 ºC to 850 ºC	0,022 ºC	CMC based on Pt100 input
		-270 ºC to 1372 ºC	0,08 ºC	CMC based on thermocouple, type K input

Remarks:

- The calibrations are carried out at an ambient temperature of 23 ºC nominal.
- This list with the scope of accreditations has only a relation with calibrations performed within the laboratory at Waddinxveen.