Annex to ISO/IEC 17025 declaration of accreditation
for registration number: **K 013**

of **Fluke Nederland B.V.**
Standaard Laboratorium
Eindhoven

This annex is valid from: **12-12-2012** to **01-10-2015** Replaces annex dated: **30-07-2012**

Premises: **Son and Nijmegen**

HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
		Fluke Son		
LF 0 0	DC/LF Quantities			
LF 1 0	DC Voltage			measuring and generating
	10 V		$6 \cdot 10^{-7} \cdot U$	zenerreferences
	1 V and 1.018 V		$2.3 \cdot 10^{-6} \cdot U$	zenerreferences
	0 μV to 10 μV		0.3 μV	
	10 μV to 200 mV		$3 \cdot 10^{-6} \cdot U$ + 0.2 μV	
	200 mV to 1 V		$3 \cdot 10^{-6} \cdot U$	
	1 V to 2 V		$2 \cdot 10^{-6} \cdot U$	
	2 V to 10 V		$1 \cdot 10^{-6} \cdot U$	
	10 V to 1000 V		$2 \cdot 10^{-6} \cdot U$	
	1000 V to 1100 V		$4 \cdot 10^{-6} \cdot U$	
	9 V to 16 V		3.4 mV	6)
	295 V to 400 V		70 mV	6)
LF 2 0	DC Current			measuring and generating
	1 μA to 10 μA		$3 \cdot 10^{-5} \cdot I$	
	10 μA to 20 A		$2 \cdot 10^{-5} \cdot I$	

This annex has been approved by:

Ir. J.C. van der Poel
Chief Executive

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
	0,5 A to 5 A		2.5 mA	6)
LF 3 0	AC Voltage			measuring and generating
	100 mV to 220 mV	10 Hz to 20 Hz	$3 \cdot 10^{-4} \cdot U$	
		20 Hz to 40 Hz	$5 \cdot 10^{-5} \cdot U$	
		40 Hz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$5 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$6 \cdot 10^{-5} \cdot U$	
		100 kHz to 200 kHz	$2 \cdot 10^{-4} \cdot U$	
		200 kHz to 500 kHz	$4 \cdot 10^{-4} \cdot U$	
		500 kHz to 1 MHz	$7 \cdot 10^{-4} \cdot U$	
	220 mV to 2.2 V	10 Hz to 20 Hz	$5 \cdot 10^{-5} \cdot U$	
		20 Hz to 40 Hz	$5 \cdot 10^{-5} \cdot U$	
		40 Hz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$4 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$5 \cdot 10^{-5} \cdot U$	
		100 kHz to 200 kHz	$2 \cdot 10^{-4} \cdot U$	
		200 kHz to 500 kHz	$4 \cdot 10^{-4} \cdot U$	
		500 kHz to 1 MHz	$7 \cdot 10^{-4} \cdot U$	
	2.2 V to 22 V	10 Hz to 20 Hz	$5 \cdot 10^{-5} \cdot U$	
		20 Hz to 40 Hz	$4 \cdot 10^{-5} \cdot U$	
		40 Hz to 20 kHz	$4 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$4 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$5 \cdot 10^{-5} \cdot U$	
		100 kHz to 200 kHz	$2 \cdot 10^{-4} \cdot U$	
		200 kHz to 500 kHz	$4 \cdot 10^{-4} \cdot U$	
		500 kHz to 1 MHz	$8 \cdot 10^{-4} \cdot U$	
	22 V to 220 V	10 Hz to 20 Hz	$6 \cdot 10^{-5} \cdot U$	

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
		20 Hz to 40 Hz	$5 \cdot 10^{-5} \cdot U$	
		40 Hz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$5 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$2 \cdot 10^{-4} \cdot U$	
	220 V to 1000 V	10 Hz to 20 Hz	$5 \cdot 10^{-5} \cdot U$	
		20 Hz to 40 Hz	$5 \cdot 10^{-5} \cdot U$	
		40 Hz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$7 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$4 \cdot 10^{-4} \cdot U$	
LF 3 3	Pulse Amplitude			
	1 mV to 25 mV	10 Hz to 10 kHz	$2.6 \cdot 10^{-4} \cdot U$	measuring
	25 mV to 110 mV	10 Hz to 10 kHz	$2.6 \cdot 10^{-4} \cdot U$	
	110 mV to 2.2 V	10 Hz to 10 kHz	$2.6 \cdot 10^{-4} \cdot U$	
	2.2 V to 11 V	10 Hz to 10 kHz	$2.6 \cdot 10^{-4} \cdot U$	
	11 V to 130 V	10 Hz to 10 kHz	$2.6 \cdot 10^{-4} \cdot U$	
	6 mV to 25 mV	10 Hz to 10 kHz	$1 \cdot 10^{-2} \cdot U$	generating
	25 mV to 110 mV	10 Hz to 10 kHz	$5 \cdot 10^{-3} \cdot U$	
	110 mV to 2.2 V	10 Hz to 10 kHz	$5 \cdot 10^{-3} \cdot U$	
	2.2 V to 11 V	10 Hz to 10 kHz	$5 \cdot 10^{-3} \cdot U$	
	11 V to 130 V	10 Hz to 10 kHz	$5 \cdot 10^{-3} \cdot U$	
LF 3 4	AC/DC-Transfer			measuring and generating
	0.5 V to 50 V	40 Hz to 1 kHz	$5 \cdot 10^{-5} \cdot U$	
		1 kHz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 100 kHz	$6 \cdot 10^{-5} \cdot U$	

HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
		100 kHz to 500 kHz	$2 \cdot 10^{-4} \cdot U$	
	0.5 V to 10 V	500 kHz to 1 MHz	$4 \cdot 10^{-4} \cdot U$	
	50 V to 100 V	40 Hz to 1 kHz	$4 \cdot 10^{-5} \cdot U$	
		1 kHz to 20 kHz	$4 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$5 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$5 \cdot 10^{-5} \cdot U$	
	100 V to 500 V	40 Hz to 1 kHz	$6 \cdot 10^{-5} \cdot U$	
		1 kHz to 20 kHz	$5 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$7 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$2 \cdot 10^{-4} \cdot U$	
	500 V to 1000 V	40 Hz to 20 kHz	$6 \cdot 10^{-5} \cdot U$	
		20 kHz to 50 kHz	$8 \cdot 10^{-5} \cdot U$	
		50 kHz to 100 kHz	$2 \cdot 10^{-4} \cdot U$	
LF 4 0	AC Current			measuring and generating
	100 µA to 1 mA	10 Hz to 1 kHz	$3.2 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$2.6 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$6.5 \cdot 10^{-4} \cdot I$	
		10 kHz to 20 kHz	$1.2 \cdot 10^{-3} \cdot I$	measuring only
	1 mA to 10 mA	10 Hz to 1 kHz	$2.3 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$1.7 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$4.3 \cdot 10^{-4} \cdot I$	
		10 kHz to 20 kHz	$6.7 \cdot 10^{-4} \cdot I$	measuring only
	10 mA to 1 A	10 Hz to 1 kHz	$2.4 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$2.1 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$4.9 \cdot 10^{-4} \cdot I$	
		10 kHz to 20 kHz	$8.2 \cdot 10^{-4} \cdot I$	measuring only

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
	1 A to 5 A	10 Hz to 1 kHz	$2.4 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$2.8 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$7.4 \cdot 10^{-4} \cdot I$	
		10 kHz to 20 kHz	$1.4 \cdot 10^{-3} \cdot I$	measuring only
	5 A to 20 A	10 Hz to 1 kHz	$3.3 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$3.8 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$7.8 \cdot 10^{-4} \cdot I$	
		10 kHz to 20 kHz	$1.4 \cdot 10^{-3} \cdot I$	measuring only
LF 6 2	DC Resistance			measuring and generating
	1 mΩ		$3 \cdot 10^{-5} \cdot R$	
	10 mΩ		$2 \cdot 10^{-5} \cdot R$	
	100 mΩ		$1 \cdot 10^{-5} \cdot R$	
	1 Ω		$3 \cdot 10^{-6} \cdot R$	
	10 Ω		$3 \cdot 10^{-6} \cdot R$	
	100 Ω		$3 \cdot 10^{-6} \cdot R$	
	1 kΩ		$3 \cdot 10^{-6} \cdot R$	
	10 kΩ		$2 \cdot 10^{-6} \cdot R$	
	100 kΩ		$3 \cdot 10^{-6} \cdot R$	
	1 MΩ		$3 \cdot 10^{-6} \cdot R$	
	10 MΩ		$5 \cdot 10^{-6} \cdot R$	
	100 MΩ		$2 \cdot 10^{-5} \cdot R$	
	1 GΩ		$6 \cdot 10^{-4} \cdot R$	
	1 mΩ to 10 mΩ		$9 \cdot 10^{-5} \cdot R$	
	10 mΩ to 100 mΩ		$3 \cdot 10^{-5} \cdot R$	
	100 mΩ to 1 Ω		$2 \cdot 10^{-5} \cdot R$	
	1 Ω to 10 MΩ		$5 \cdot 10^{-6} \cdot R$	

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
	10 MΩ to 100 MΩ		$2 \cdot 10^{-5} \cdot R$	
	100 MΩ to 1 GΩ		$6 \cdot 10^{-4} \cdot R$	
LF 6 5	LF Capacitance			measuring and generating
	1 pF to 100 pF	1 kHz to 10 kHz	$3 \cdot 10^{-5} \cdot C$	
	100 pF to 1 nF	1 kHz to 5 kHz	$2 \cdot 10^{-5} \cdot C$	
	1 nF to 1 µF	1 kHz	$2 \cdot 10^{-4} \cdot C$	
	1 µF to 10 µF	100 Hz	$3 \cdot 10^{-4} \cdot C$	
	200 µF to 500 µF	DCV	$1.2 \cdot 10^{-3} \cdot C$	
	500 µF to 110 mF	DCV	$1 \cdot 10^{-3} \cdot C$	
RF 0 0	HIGH FREQUENCY QUANTITIES			
RF 1 0	CW Flatness			
	5 mVpp to 200 mVpp	50 kHz to 1100 MHz	$2.7 \cdot 10^{-2}$ related to 50 kHz/50 Ω	measuring
	200 mVpp to 6 Vpp	50 kHz to 1100 MHz	$2.5 \cdot 10^{-2}$ related to 50 kHz/50 Ω	measuring
	5 mVpp to 20 mVpp	50 kHz to 1100 MHz	$9 \cdot 10^{-2}$ related to 50 kHz/50 Ω	generating VSWR scope ≤ 1.3
	20 mVpp to 6 Vpp	50 kHz to 1100 MHz	$8 \cdot 10^{-2}$ related to 50 kHz/50 Ω	generating VSWR scope ≤ 1.3
TF 0 0	TIME & FREQUENCY			
TF 2 1	Frequency			measuring and generating
	10 MHz		$6 \cdot 10^{-11} \cdot f$	
	10 mHz to 1 MHz		$1 \cdot 10^{-10} \cdot f + T_e$	1)
	1 MHz to 300 MHz		$1 \cdot 10^{-10} \cdot f$	
	300 MHz to 1.5 GHz		$6 \cdot 10^{-9} \cdot f$	2)

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
TF 2 2	Time Interval			
	1 μs to 10 s		$5 \cdot 10^{-10} \cdot t$ + T.E.	measuring only 7)
	10 s to 10^5 s		$5 \cdot 10^{-10} \cdot t$ + 10 ns	measuring only
TF 2 3	Phase Angle			
	0 ° to 180 °	10 Hz to 50 Hz	0.05 °	at equal input voltages 100 mV < U_i < 300 V generate up to 120 V
		50 Hz to 1 kHz	0.08 °	
		1 kHz to 5 kHz	0.18 °	
		5 kHz to 10 kHz	0.35 °	
		10 kHz to 30 kHz	0.75 °	
	0 ° to 180 °	50 Hz	0.10 °	un equal input voltages 100 mV < U_i < 300 V ratio 1:100
		50 Hz to 1 kHz	0.25 °	
		1 kHz to 5 kHz	0.40 °	
		5 kHz to 10 kHz	1.0 °	
		10 kHz to 30 kHz	1.8 °	
TF 2 4	Rise time			
	70 ps to 1000 ps	pulse repeat ≤1 MHz	20 ps	180 mV_{pp} to 300 mV_{pp} in 50 Ω measuring

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HCS code	Measured quantity, Instrument, Measure	Range	CMC *	Remarks
PV 00	Pressure			
PV11	Absolute pressure	10 kPa .. 210 kPa 210 kPa .. 700 kPa 700 kPa .. 10 MPa	$4 \cdot 10^{-5} \cdot p$ + 9 Pa $3.5 \cdot 10^{-5} \cdot p$ + 11 Pa $3 \cdot 10^{-5} \cdot p$ + 200 Pa	Nitrogen, measuring and generating
PV12	Gauge pressure	0 kPa .. 210 kPa 210 kPa .. 700 kPa 700 kPa .. 10 MPa	$4 \cdot 10^{-5} \cdot p_e$ + 5 Pa $3 \cdot 10^{-5} \cdot p_e$ + 8 Pa $3 \cdot 10^{-5} \cdot p_e$ + 150 Pa	Nitrogen, measuring and generating

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HCS code	Measured quantity, Instrument, Measure	Range	CMC *	Remarks
TE 0 0	TEMPERATURE, HUMIDITY, THERMOPHYSICAL PROPERTIES			
TE 1 0	Resistance thermometers			also for indicators and recorder with resistance Thermometers
	5 °C to 15 °C		0.11 °C	measurements in climate chamber
	15 °C to 24 °C		0.045 °C	measurements in climate chamber
	24 °C to 65 °C		0.045 °C to 0.15 °C	measurements in climate chamber
	0.01 °C		0.0059 °C	triple point of water
	29.7646 °C		0.0068 °C	fixed point
	-80 °C to 125 °C		0.085 °C	5)
	-80 °C to 248 °C		0.014 °C	
	248 °C to 500 °C		0.021°C	
	500 °C to 660 °C		0.053°C	
	419.527 °C		0.010 °C	fixed point
TE 3 0	Thermocouples			also for indicators and recorders with thermocouples
	0 °C to 40 °C		0.039 °C	thermocouple Type-E
	-30 °C to 200 °C		0.16 °C	5)
	-80 °C to 248 °C		0.10 °C	
	248 °C to 420 °C		0.11 °C	
	420 °C to 660 °C		0.18 °C	

HCS code	Measured quantity, Instrument, Measure	Range	CMC *	Remarks
	660 °C to 700 °C		0.70 °C	
	700 °C to 1000 °C		0.88 °C	
	35 °C to 500 °C		0.5 °C to 1.8 °C	Surface Thermometers and Surface Calibrators
TE 4 2	Liquid-in-Glass thermometer			
	-25 °C to 10 °C		0.038 °C	
	10 °C to 80 °C		0.026 °C	
	80 °C to 205 °C		0.039 °C	
TE 6 2	Radiation (infrared)			pyrometers and black body sources
	-35 °C to 550 °C		0.20 °C to 0.55 °C	
	550 °C to 1000 °C		3.5 °C	
TE 9 0	Simulators/Display units			
	-200 °C to 850 °C		0.009 °C	3), 5) based on Pt100
	0 °C to 40 °C		0.050 °C	4) TC type E
	-250 °C to –200 °C		0.38 °C	4), 5)
	-200 °C to –100 °C		0.25 °C	4), 5)
	-100 °C to –25 °C		0.14 °C	4), 5)
	-25 °C to 120 °C		0.12 °C	4), 5)
	120 °C to 1000 °C		0.19 °C	4), 5)
	1000 °C to 1372 °C		0.30 °C	4), 5)
	1372 °C to 1767 °C		0.34 °C	4), 5)

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HCS code	Measured quantity, Instrument, Measure	Range	CMC *	Remarks
TE 10 0	Calibration baths and furnaces			
	-80 °C to 500 °C		0.0003 °C	5) only stability uncertainty, not valid for accuracy uncertainty
	500 °C to 660 °C		0.0014 °C	
	-80 °C to 140°C		0.033 °C	5)
	140 °C to 660 °C		0.053°C	5)
	660 °C to 1000 °C		0.70 °C	only for furnaces
	1000 °C to 1200 °C		2.2 °C	only for furnaces
RH 0 0	Relative Humidity			
	10 % rh to 70 % rh		0.37 % rh	15 °C to 50 °C
	70 % rh to 95 % rh		0.46 % rh	15 °C to 50 °C

* Remarks:

The calibrations inside the pressure laboratory are carried out at an ambient temperature of nominal (20 ± 2) °C, with a relative humidity of nominal (50 ± 10)%.
The calibrations inside the electrical laboratory are carried out at an ambient temperature of nominal (23 ± 1) °C, with a relative humidity of nominal (45 ± 10) % and outside the electrical laboratory at an ambient temperature of nominal (23 ± 3) °C, with a relative humidity of nominal (45 ± 20) %.

1) T_e = Trigger error for sine wave signals = $(4/f)\cdot 10^{-5}\cdot f$ (f = measured frequency).
2) Generate at T_a = (23 ± 3) °C.
3) Resistance Thermometers based on a Pt100. Others e.g. thermistors which actually measure resistance, see best measurement capabilities for electricity.
4) Thermocouple with internal reference junction compensation. Without, or with switched off reference junction compensation, which actually measures voltage, see best measurement capabilities for electricity.
5) Also on site; all other calibrations refers to calibrations carried out in a fixed laboratory.
Best measurement capability: the highest achievable accuracy for a given measuring point or measuring range, expressed as the total positive and negative measurement uncertainty.
6) Measuring on-site only
7) T.E. = trigger error related to number of 10 MHz pulses counting during start/stop.

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 "Expression of the Uncertainty of Measurement in Calibration".

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		Fluke Nijmegen		
LF 0 0	DC/LF Quantities			
LF 1 0	DC Voltage			
	10 mV to 100 mV		$4.0 \cdot 10^{-4} \cdot U$	measuring
	100 mV to 1 V		$2.0 \cdot 10^{-5} \cdot U$	
	1 V to 100 V		$5.2 \cdot 10^{-6} \cdot U$	
	100 V to 1000 V		$1.0 \cdot 10^{-5} \cdot U$	
	10 mV to 100 mV		$4.4 \cdot 10^{-5} \cdot U$	generating
	100 mV to 1 V		$9.2 \cdot 10^{-6} \cdot U$	
	1 V to 10 V		$6.8 \cdot 10^{-6} \cdot U$	
	10 V to 100 V		$6.1 \cdot 10^{-6} \cdot U$	
	100 V to 1000 V		$6.3 \cdot 10^{-6} \cdot U$	
LF 2 0	DC current			
	1 μA to 10 μA		$1.4 \cdot 10^{-4} \cdot I$	measuring
	10 μA to 100 μA		$1.2 \cdot 10^{-4} \cdot I$	
	0.1 mA to 1 mA		$1.2 \cdot 10^{-4} \cdot I$	
	1 mA to 10 mA		$8.0 \cdot 10^{-5} \cdot I$	
	10 mA to 100 mA		$8.0 \cdot 10^{-5} \cdot I$	
	0.1 A to 1 A		$1.0 \cdot 10^{-4} \cdot I$	
	100 μA to 200 μA		$5.0 \cdot 10^{-5} \cdot I$	Generating
	200 μA to 1 mA		$5.2 \cdot 10^{-5} \cdot I$	
	1 mA to 20 mA		$5.2 \cdot 10^{-5} \cdot I$	
	20 mA to 200 mA		$5.0 \cdot 10^{-5} \cdot I$	
	0.2 A to 1 A		$6.0 \cdot 10^{-5} \cdot I$	

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
LF 3 0	AC voltage			
	100 mV to 1 V	40 Hz to 1 kHz	$4.0 \cdot 10^{-4} \cdot U$	measuring
		1 kHz to 50 kHz	$2.4 \cdot 10^{-4} \cdot U$	
		50 kHz to 100 kHz	$7.4 \cdot 10^{-4} \cdot U$	
		100 kHz to 1 MHz	$4.3 \cdot 10^{-3} \cdot U$	
	1 V – 10 V	40 Hz to 1 kHz	$2.0 \cdot 10^{-4} \cdot U$	
		1 kHz to 50 kHz	$2.2 \cdot 10^{-4} \cdot U$	
		50 kHz to 100 kHz	$4.0 \cdot 10^{-4} \cdot U$	
		100 kHz to 1 MHz	$2.0 \cdot 10^{-3} \cdot U$	
	10 V – 100 V	40 Hz to 1 kHz	$2.0 \cdot 10^{-4} \cdot U$	
		1 kHz to 50 kHz	$2.2 \cdot 10^{-4} \cdot U$	
		50 kHz to 100 kHz	$6.0 \cdot 10^{-4} \cdot U$	
	100 V to 600 V	40 Hz to 1 kHz	$2.5 \cdot 10^{-4} \cdot U$	
	10 mV to 100 mV	10 Hz to 40 Hz	$1.5 \cdot 10^{-3} \cdot U$	generating
		40 Hz to 1 kHz	$1.2 \cdot 10^{-3} \cdot U$	
		1 kHz to 20 kHz	$1.2 \cdot 10^{-3} \cdot U$	
		20 kHz to 50 kHz	$1.4 \cdot 10^{-3} \cdot U$	
		50 kHz to 500 kHz	$1.6 \cdot 10^{-2} \cdot U$	
		500 kHz to 1 MHz	$1.6 \cdot 10^{-2} \cdot U$	
	100 mV to 10 V	10 Hz to 40 Hz	$8.4 \cdot 10^{-4} \cdot U$	
		40 Hz to 1 kHz	$3.8 \cdot 10^{-4} \cdot U$	
		1 kHz to 20 kHz	$3.8 \cdot 10^{-4} \cdot U$	

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
		20 kHz to 50 kHz	$6.3 \cdot 10^{-4} \cdot U$	
		50 kHz to 500 kHz	$4.0 \cdot 10^{-3} \cdot U$	
		500 kHz to 1 MHz	$7.5 \cdot 10^{-3} \cdot U$	
	10 V to 100 V	10 Hz to 40 Hz	$6.7 \cdot 10^{-4} \cdot U$	
		40 Hz to 1 kHz	$2.0 \cdot 10^{-4} \cdot U$	
		1 kHz to 20 kHz	$2.0 \cdot 10^{-4} \cdot U$	
		20 kHz to 50 kHz	$5.2 \cdot 10^{-4} \cdot U$	
		50 kHz to 100 kHz	$5.2 \cdot 10^{-4} \cdot U$	
	100 V to 600 V	60 Hz to 400 Hz	$1.3 \cdot 10^{-3} \cdot U$	
		400 Hz to 1 kHz	$7.5 \cdot 10^{-4} \cdot U$	
LF 4 0	AC Current			
	100 μA	40 Hz to1 kHz	$1.6 \cdot 10^{-3} \cdot I$	measuring
	1 mA	40 Hz to 1 kHz	$1.0 \cdot 10^{-3} \cdot I$	
		1 kHz to 5 kHz	$1.4 \cdot 10^{-3} \cdot I$	
	10 mA	40 Hz to 1 kHz	$1.0 \cdot 10^{-3} \cdot I$	
		1 kHz to 5 kHz	$1.4 \cdot 10^{-3} \cdot I$	

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This annex is valid from: **12-12-2012** to **01-10-2015** Replaces annex dated: **30-07-2012**

HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
	100 mA	40 Hz to 1 kHz	$1.0 \cdot 10^{-3} \cdot I$	
		1 kHz to 5 kHz	$1.4 \cdot 10^{-3} \cdot I$	
	1 A	40 Hz to 1 kHz	$1.0 \cdot 10^{-3} \cdot I$	
		1 kHz to 5 kHz	$1.0 \cdot 10^{-3} \cdot I$	
	100 μA	10 Hz to 40 Hz	$6.6 \cdot 10^{-4} \cdot I$	generating
		40 Hz to1 kHz	$6.6 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$6.5 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$1.7 \cdot 10^{-3} \cdot I$	
	1 mA	10 Hz to 40 Hz	$4.6 \cdot 10^{-4} \cdot I$	
		40 Hz to 1 kHz	$3.6 \cdot 10^{-3} \cdot I$	
		1 kHz to 5 kHz	$3.6 \cdot 10^{-3} \cdot I$	
		5 kHz to 10 kHz	$8.0 \cdot 10^{-4} \cdot I$	
	10 mA	10 Hz to 40 Hz	$4.6 \cdot 10^{-4} \cdot I$	
		40 Hz to 1 kHz	$4.6 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$3.4 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$8.0 \cdot 10^{-4} \cdot I$	
	100 mA	10 Hz to 40 Hz	$4.9 \cdot 10^{-4} \cdot I$	
		40 Hz to 1 kHz	$4.9 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$4.2 \cdot 10^{-4} \cdot I$	
		5 kHz to 10 kHz	$4.2 \cdot 10^{-3} \cdot I$	
	1 A	40 Hz to 1 kHz	$5.0 \cdot 10^{-4} \cdot I$	
		1 kHz to 5 kHz	$6.0 \cdot 10^{-4} \cdot I$	

HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
		5 kHz to 10 kHz	$1.4 \cdot 10^{-3} \cdot I$	
LF 6 2	DC Resistance			
	1 Ω – 10 Ω		$1.1 \cdot 10^{-4} \cdot R$	measuring
	10 Ω – 100 Ω		$6.0 \cdot 10^{-5} \cdot R$	
	0.1 kΩ – 1 kΩ		$4.0 \cdot 10^{-5} \cdot R$	
	1 kΩ – 10 kΩ		$4.2 \cdot 10^{-5} \cdot R$	
	10 kΩ – 100 kΩ		$4.2 \cdot 10^{-5} \cdot R$	
	0.1 MΩ – 1 MΩ		$6.0 \cdot 10^{-5} \cdot R$	
	1 MΩ – 10 MΩ		$6.0 \cdot 10^{-5} \cdot R$	
	10 MΩ – 100 MΩ		$2.5 \cdot 10^{-3} \cdot R$	
	1 Ω		$6.0 \cdot 10^{-5} \cdot R$	generating
	1.9 Ω		$4.0 \cdot 10^{-5} \cdot R$	
	10 Ω		$2.0 \cdot 10^{-5} \cdot R$	
	19 Ω		$1.7 \cdot 10^{-5} \cdot R$	
	100 Ω		$1.4 \cdot 10^{-5} \cdot R$	
	190 Ω		$1.4 \cdot 10^{-5} \cdot R$	
	1 kΩ		$1.2 \cdot 10^{-5} \cdot R$	
	1.9 kΩ		$1.2 \cdot 10^{-5} \cdot R$	
	10 kΩ		$6.0 \cdot 10^{-6} \cdot R$	
	19 kΩ		$1.2 \cdot 10^{-5} \cdot R$	
	100 kΩ		$1.1 \cdot 10^{-5} \cdot R$	
	190 kΩ		$1.0 \cdot 10^{-5} \cdot R$	
	1 MΩ		$1.6 \cdot 10^{-5} \cdot R$	
	1.9 MΩ		$2.4 \cdot 10^{-5} \cdot R$	
	10 MΩ		$3.6 \cdot 10^{-5} \cdot R$	

Annex to ISO/IEC 17025 declaration of accreditation
for registration number: **K 013**

of **Fluke Nederland B.V.**
Standaard Laboratorium
Eindhoven

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HCS code	Measured quantity, Range	Frequency	CMC *	Remarks
	19 MΩ		$4.4 \cdot 10^{-5} \cdot R$	
	100 MΩ		$1.3 \cdot 10^{-4} \cdot R$	

* 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 "Expression of the Uncertainty of Measurement in Calibration".

all calibrations are carried out in a fixed laboratory

The calibrations are carried out inside the laboratory at an ambient temperature of nominal (23 ± 2) °C, with a relative humidity of nominal (50 ± 20)%