Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2005
Registration number: **K 063**

of **Dijkstra Advice, Research & EMC Services B.V.**
Trading as DARE!! Calibrations

This annex is valid from: **19-12-2018** to **01-11-2021** Replaces annex dated: **07-11-2018**

Location(s) where activities are performed under accreditation

Head Office

Vijzelmolenlaan 7
3447 GX
Woerden
The Netherlands

Location	Abbreviation/ location code
Vijzelmolenlaan 7 3447 GX Woerden The Netherlands	W
On-site	O

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
LF 0 0	DC/LF ELECTRICITY				
LF 1 0	DIRECT VOLTAGE				W
	0 - 2 mV		$6{\cdot}10^{-6}{\cdot}U$ + 1.1 μV	Generating	
	2 – 20 mV		$8{\cdot}10^{-6}{\cdot}U$ + 1.1 μV		
	20 mV – 200 mV		$1.0{\cdot}10^{-5}{\cdot}U$ + 1.0 μV		
	200 mV – 2 V		$1.1{\cdot}10^{-5}{\cdot}U$ + 1.0 μV		

[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".

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

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	2 V – 20 V		$6 \cdot 10^{-6} \cdot U$ + 22 μV		W
	20 V – 200 V		$8 \cdot 10^{-6} \cdot U$ + 0.2 mV		
	200 V – 1000 V		$9 \cdot 10^{-6} \cdot U$ + 2.7 mV		
	0– 200 mV		$3 \cdot 10^{-5} \cdot U$ + 0.8 μV	Measuring	
	200 mV – 2 V		$7 \cdot 10^{-6} \cdot U$ + 2.0 μV		
	2 V – 20 V		$7 \cdot 10^{-6} \cdot U$ + 20 μV		
	20 V – 200 V		$1.2 \cdot 10^{-5} \cdot U$ + 0.15 mV		
	200 V – 1000 V		$1.1 \cdot 10^{-5} \cdot U$ + 1.8 mV		
LF 2 0	DIRECT CURRENT				W
	0 - 200 μA		$5 \cdot 10^{-3} \cdot I$ + 5 nA	Generating	
	200 μA - 2 mA		$5 \cdot 10^{-4} \cdot I$ + 12 nA		
	2 - 20 mA		$7 \cdot 10^{-5} \cdot I$ + 0.12 μA		
	20 - 200 mA		$5 \cdot 10^{-5} \cdot I$ + 1.8 μA		
	200 mA - 1 A		$1.2 \cdot 10^{-4} \cdot I$ + 30 μA		
	1 – 2 A		$2.4 \cdot 10^{-4} \cdot I$ + 0,04 mA		
	0 - 200 μA		$5 \cdot 10^{-2} \cdot I$ + 5 nA	Measuring	
	200 μA - 2 mA		$5 \cdot 10^{-3} \cdot I$ + 0.05 μA		
	2 - 20 mA		$5 \cdot 10^{-4} \cdot I$ + 0.5 μA		
	20 - 200 mA		$1.3 \cdot 10^{-4} \cdot I$ + 5 μA		
	200 mA - 2 A		$2.4 \cdot 10^{-4} \cdot I$ + 0.05 mA		

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
LF 3 0	ALTERNATING VOLTAGE				W
	1 - 2 mV	30 Hz – 3,3 kHz	$1.1 \cdot 10^{-3} \cdot U + 7\ \mu V$	Generating, 2-wire	
		3,3 – 10 kHz	$1.8 \cdot 10^{-3} \cdot U + 7\ \mu V$		
		10 - 33 kHz	$4 \cdot 10^{-3} \cdot U + 7\ \mu V$		
		33 - 100 kHz	$1.0 \cdot 10^{-2} \cdot U + 7\ \mu V$		
	2 mV - 20 mV	30 Hz - 1 kHz	$3.2 \cdot 10^{-4} \cdot U + 7\ \mu V$		
		1 - 3,3 kHz	$5 \cdot 10^{-4} \cdot U + 7\ \mu V$		
		3,3 – 10 kHz	$1.3 \cdot 10^{-3} \cdot U + 6\ \mu V$		
		10 - 33 kHz	$3.5 \cdot 10^{-3} \cdot U + 6\ \mu V$		
		33 - 100 kHz	$1.2 \cdot 10^{-2} \cdot U + 6\ \mu V$		
	20 mV - 200 mV	30 - 330 Hz	$2.3 \cdot 10^{-4} \cdot U + 12\ \mu V$		
		330 Hz - 1 kHz	$3.1 \cdot 10^{-4} \cdot U + 10\ \mu V$		
		1 – 3,3 kHz	$6 \cdot 10^{-4} \cdot U + 6\ \mu V$		
		3,3 - 10 kHz	$1.3 \cdot 10^{-3} \cdot U + 6\ \mu V$		
		10 - 33 kHz	$3.6 \cdot 10^{-3} \cdot U + 6\ \mu V$		
		33 - 100 kHz	$1.2 \cdot 10^{-2} \cdot U + 6\ \mu V$		
	90 mV - 2V	10 - 32 Hz	$1.3 \cdot 10^{-4} \cdot U + 50\ \mu V$	Generating, 4-wire	
		32 - 330 Hz	$9 \cdot 10^{-5} \cdot U + 50\ \mu V$		
		330 Hz – 3,3 kHz	$6 \cdot 10^{-5} \cdot U + 30\ \mu V$		
		3.3 - 33 kHz	$9 \cdot 10^{-5} \cdot U + 25\ \mu V$		
		33 - 100 kHz	$1.0 \cdot 10^{-4} \cdot U + 0.22$ mV		
		100 - 330 kHz	$1.6 \cdot 10^{-3} \cdot U + 0.8$ mV		
		330 kHz - 1 MHz	$1.4 \cdot 10^{-2} \cdot U + 2.0$ mV		
	2 V - 20 V	10 - 32 Hz	$1.1 \cdot 10^{-4} \cdot U + 0.6$ mV		
		32 - 330 Hz	$7 \cdot 10^{-5} \cdot U + 0.5$ mV		
		330 Hz - 33 kHz	$6 \cdot 10^{-5} \cdot U + 0.4$ mV		
		33 - 100 kHz	$2.2 \cdot 10^{-4} \cdot U + 2.0$ mV		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	2 V – 20 V	100 - 330 kHz	$1.6 \cdot 10^{-3} \cdot U$ + 7 mV		W
		330 kHz - 1 MHz	$1.1 \cdot 10^{-2} \cdot U$ + 12 mV		
	20 V – 200 V	10 - 32 Hz	$1.7 \cdot 10^{-4} \cdot U$ + 9 mV		
		32 - 330 Hz	$1.2 \cdot 10^{-4} \cdot U$ + 6 mV		
		330 Hz - 10 kHz	$7 \cdot 10^{-5} \cdot U$ + 5 mV		
		10 - 33 kHz	$8 \cdot 10^{-5} \cdot U$ + 6 mV		
		33 kHz – 100 kHz	$4 \cdot 10^{-4} \cdot U$ + 20 mV		
	200 V – 1000 V	50 - 330 Hz	$9 \cdot 10^{-4} \cdot U$ + 50 mV		
		330 Hz- 10 kHz	$7 \cdot 10^{-4} \cdot U$ + 40 mV		
		10 - 33 kHz	$9 \cdot 10^{-4} \cdot U$ + 50 mV		
	2 mV – 200 mV	20 - 40 Hz	$3 \cdot 10^{-4} \cdot U$ + 15 µV	Measuring	
		40 Hz - 2 kHz	$2.8 \cdot 10^{-4} \cdot U$ + 15 µV		
		2 - 10 kHz	$2.7 \cdot 10^{-4} \cdot U$ + 15 µV		
		10 - 30 kHz	$5 \cdot 10^{-4} \cdot U$ + 20 µV		
		30 - 100 kHz	$1.0 \cdot 10^{-3} \cdot U$ + 40 µV		
	200 mV – 2 V	20 - 40 Hz	$2.1 \cdot 10^{-4} \cdot U$ + 55 µV		
		40 - 100 Hz	$1.9 \cdot 10^{-4} \cdot U$ + 55 µV		
		100 - 300 Hz	$1.7 \cdot 10^{-4} \cdot U$ + 55 µV		
		300 - 1000 Hz	$1.6 \cdot 10^{-4} \cdot U$ + 40 µV		
		1 - 3 kHz	$1.8 \cdot 10^{-4} \cdot U$ + 40 µV		
		3 - 10 kHz	$3 \cdot 10^{-4} \cdot U$ + 0.05 mV		
		10 - 60 kHz	$6 \cdot 10^{-4} \cdot U$ + 0.30 mV		
		60 - 100 kHz	$6 \cdot 10^{-4} \cdot U$ + 0.30 mV		
		100 - 300 kHz	$4.10^{-3} U$ + 2.5 mV		
		300 kHz - 1 MHz	$1.2 \cdot 10^{-2} \cdot U$ + 24 mV		
	2 V – 20 V	20 - 40 Hz	$2.1 \cdot 10^{-4} \cdot U$ + 0.6 mV		
		40 - 100 Hz	$1.9 \cdot 10^{-4} \cdot U$ + 0.6 mV		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	2 V – 20 V	100 Hz - 3 kHz	$1.9 \cdot 10^{-4} \cdot U$ + 0.6 mV		W
		3 - 10 kHz	$3.0 \cdot 10^{-4} \cdot U$ + 0.5 mV		
		10 - 60 kHz	$6 \cdot 10^{-4} \cdot U$ + 3.0 mV		
		60 - 300 kHz	$3.7 \cdot 10^{-3} \cdot U$ + 30 mV		
		300 kHz - 1 MHz	$1.2 \cdot 10^{-2} \cdot U$ + 0.24 V		
	20 V - 200 V	20 - 40 Hz	$2.2 \cdot 10^{-4} \cdot U$ + 6 mV		
		40 - 100 Hz	$1.9 \cdot 10^{-4} \cdot U$ + 7 mV		
		100 Hz – 300 Hz	$1.7 \cdot 10^{-4} \cdot U$ + 6 mV		
		300 Hz - 10 kHz	$1.8 \cdot 10^{-4} \cdot U$ + 5 mV		
		10 – 30 kHz	$3.0 \cdot 10^{-4} \cdot U$ + 6 mV		
		30 - 100 kHz	$7 \cdot 10^{-4} \cdot U$ + 30 mV		
	200 V - 1000 V	40 Hz - 3 kHz	$2.2 \cdot 10^{-4} \cdot U$ + 30 mV		
		3 - 10 kHz	$1.9 \cdot 10^{-4} \cdot U$ + 0,04 V		
		10 - 30 kHz	$4 \cdot 10^{-4} \cdot U$ + 0,08 V		
LF 4 0	ALTERNATING CURRENT				W
	100 - 200 µA	10 - 32 Hz	$3.0 \cdot 10^{-4} \cdot I$ + 13 nA	Generating	
		32 - 330 Hz	$1.9 \cdot 10^{-3} \cdot I$ + 11 nA		
		330 - 1000 Hz	$6 \cdot 10^{-3} \cdot I$ + 5 nA		
	200 µA - 2 mA	10 - 32 Hz	$1.6 \cdot 10^{-4} \cdot I$ + 0.15 µA		
		32 - 330 Hz	$1.6 \cdot 10^{-4} \cdot I$ + 0.17 µA		
		330 - 1000 Hz	$1.5 \cdot 10^{-4} \cdot I$ + 0.17 µA		
		1 - 3.3 kHz	$2.0 \cdot 10^{-4} \cdot I$ + 0.20 µA		
		3.3 - 5 kHz	$2.8 \cdot 10^{-4} \cdot I$ + 0.17 µA		
	2 mA - 20 mA	10 - 32 Hz	$1.6 \cdot 10^{-4} \cdot I$ + 1.5 µA		
		32 - 330 Hz	$1.6 \cdot 10^{-4} \cdot I$ + 1.7 µA		
		330 - 1000 Hz	$1.4 \cdot 10^{-4} \cdot I$ + 1.7 µA		
		1 - 3.3 kHz	$2.6 \cdot 10^{-4} \cdot I$ + 1.7 µA		

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	2 mA - 20 mA	3.3 - 5 kHz	$2.7 \cdot 10^{-4} \cdot I + 1.7$ µA		W
	20 mA - 200 mA	10 - 32 Hz	$1.6 \cdot 10^{-4} \cdot I + 15$ µA		
		32 - 330 Hz	$1.6 \cdot 10^{-4} \cdot I + 16$ µA		
		330 - 1000 Hz	$1.4 \cdot 10^{-4} \cdot I + 17$ µA		
		1 - 3.3 kHz	$2.6 \cdot 10^{-4} \cdot I + 17$ µA		
		3.3 - 5 kHz	$2.6 \cdot 10^{-4} \cdot I + 17$ µA		
	200 mA - 1 A	10 - 32 Hz	$4 \cdot 10^{-4} \cdot I + 0.15$ mA		
		32 - 330 Hz	$6 \cdot 10^{-4} \cdot I + 0.15$ mA		
		330 - 1000 Hz	$1.5 \cdot 10^{-3} \cdot I + 0.10$ mA		
		1 - 3.3 kHz	$5 \cdot 10^{-3} \cdot I + 0.09$ mA		
		3.3 - 5 kHz	$8 \cdot 10^{-3} \cdot I + 33$ µA		
	1 A - 2 A	10 - 32 Hz	$8 \cdot 10^{-4} \cdot I + 0.20$ mA		
		32 - 330 Hz	$9 \cdot 10^{-4} \cdot I + 0.20$ mA		
		330 - 1000 Hz	$1.6 \cdot 10^{-3} \cdot I + 0{,}20$ mA		
		1 - 3.3 kHz	$5 \cdot 10^{-3} \cdot I + 0.09$ mA		
		3.3 - 5 kHz	$8 \cdot 10^{-3} \cdot I + 33$ µA		
	100 µA - 200 µA	50 - 1000 Hz	$4 \cdot 10^{-4} \cdot I + 25$ nA	Measuring	
		1 - 5 kHz	$6 \cdot 10^{-4} \cdot I + 0{,}05$ nA		
	200 µA - 2 mA	50 - 300 Hz	$4 \cdot 10^{-4} \cdot I + 0.25$ µA		
		300 - 1000 Hz	$4 \cdot 10^{-4} \cdot I + 0.25$ µA		
		1 - 5 kHz	$6 \cdot 10^{-4} \cdot I + 0.5$ µA		
	2 mA - 20 mA	50 - 300 Hz	$4 \cdot 10^{-4} \cdot I + 2.5$ µA		
		300 - 1000 Hz	$4 \cdot 10^{-4} \cdot I + 2.5$ µA		
		1 - 5 kHz	$6 \cdot 10^{-4} \cdot I + 5$ µA		
	20 mA - 200 mA	50 - 1000 Hz	$4 \cdot 10^{-4} \cdot I + 25$ µA		
		1 - 5 kHz	$6 \cdot 10^{-4} \cdot I + 0{,}05$ mA		
	200 mA - 2 A	50 - 1000 Hz	$1.2 \cdot 10^{-3} \cdot I + 0.5$ mA		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	200 mA - 2 A	1 - 5 kHz	$2.5 \cdot 10^{-3} \cdot I$ + 1.3 mA		W
LF 6 0	IMPEDANCE (DC/LF)				
LF 6 2	DC resistance				W
	1 Ω		0.2 mΩ	Generating, 4-wire	
	10 Ω		0.5 mΩ		
	100 Ω		1.9 mΩ		
	1 kΩ		21 mΩ		
	10 kΩ		0.2 Ω		
	100 kΩ		2.3 Ω		
	1 MΩ		33 Ω		
	10 MΩ		0.7 kΩ		
	100 MΩ		22 kΩ		
	10 Ω		0.24 Ω	Generating, 2-wire	
	100 Ω		0.24 Ω		
	1 kΩ		0.35 Ω		
	10 kΩ		0.5 Ω		
	100 kΩ		2.6 Ω		
	1 MΩ		33 Ω		
	10 MΩ		0.7 kΩ		
	100 MΩ		22 kΩ		
	0 - 20 Ω		$2.0 \cdot 10^{-5} \cdot R$ + 0.12 mΩ	Measuring, 4-wire	
	20 - 200 Ω		$1.5 \cdot 10^{-5} \cdot R$ + 0.5 mΩ		
	200 - 2000 Ω		$1.2 \cdot 10^{-5} \cdot R$ + 2.5 mΩ		
	2 - 20 kΩ		$1.2 \cdot 10^{-5} \cdot R$ + 25 mΩ		
	20 - 200 kΩ		$2.1 \cdot 10^{-5} \cdot R$ + 0.4 Ω		

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	200 kΩ - 2 MΩ		$3.1 \cdot 10^{-5} \cdot R$ + 10 Ω		W
	2 - 20 MΩ		$4.0 \cdot 10^{-5} \cdot R$ + 0.25 kΩ	Measuring, 2-wire	
	20 - 200 MΩ		$3.5 \cdot 10^{-4} \cdot R$ + 15 kΩ		
	200 MΩ - 2 GΩ		$3.5 \cdot 10^{-3} \cdot R$ + 1.1 MΩ		
RF 0 0	HIGH FREQUENCY QUANTITIES				
RF 2 0	Impedance				W
	LISN Impedance	9 kHz – 30 MHz	0.3 Ω - 1.1 Ω 1.2 ° – 3.8 °	50 Ω // (50 µH + 5 Ω) and 50 Ω // 50 µH	
		100 kHz – 150 MHz	0.5 Ω - 0.9 Ω 3.3° – 8 °	50 Ω // (5 µH + 1 Ω) and 50 Ω // 5 µH	
	CDN Impedance	150 kHz – 300 MHz	5 Ω – 6 Ω 2.4 ° – 3.9 °	150 Ω, 0 ° nominal	
RF 2 1	Reflection coefficient			3)	W
	Magnitude 0 to 1.0	9 kHz – 1 MHz	$0.005+0.007 \cdot \Gamma+0.005 \cdot \Gamma^2$	Nom. impedance 50 Ω at nominal -10 dBm RF power	
		1 MHz - 2 GHz	$0.005+0.003 \cdot \Gamma+0.005 \cdot \Gamma^2$		
		2 GHz - 8 GHz	$0.02+0.004 \cdot \Gamma+0.02 \cdot \Gamma^2$		
		8 GHz – 18 GHz	$0.03+0.004 \cdot \Gamma+0.04 \cdot \Gamma^2$		
	Phase –180° to + 180°	9 kHz -18 GHz	$u(\theta) = \arcsin\left(\frac{u(\lvert \Gamma \rvert)}{\lvert \Gamma \rvert}\right)$	If the magnitude is less than its uncertainty, the phase uncertainty is 180°	

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
RF 2 2	Transmission Coefficient			For coaxial 50 Ω devices 1, 3)	W
	Magnitude (0 to -30 dB)	9 kHz – 10 MHz	0.04 dB	at nom. -10 dBm RF power	
		10 MHz – 1500 MHz	0.08 dB		
		1500 MHz – 18 GHz	0.12 dB		
	Magnitude (-30 to -50 dB)	9 kHz – 1500 MHz	0.08 dB	at nom. 0 dBm RF power	
		1500 MHz – 8 GHz	0.12 dB		
		8 GHz – 18 GHz	0.15 dB		
	Magnitude (-50 to -70) dB	9 kHz – 18 GHz	0.25 dB	at nom. +10 dBm * RF power	
	Magnitude (-70 to -80) dB	9 kHz – 18 GHz	0.7 dB	at nom. +10 dBm * RF power	
	Magnitude (-80 to -90)dB	30 kHz – 18 GHz	2.0 dB	at nom. +10 dBm * RF power	
	Magn. (–90 to –100)dB	30 kHz – 18 GHz	5 dB	at nom. +10 dBm * RF power	
				* +5dBm above 8 GHz	
	Antenna Reflection coefficient				
	Magnitude 0 – 1.0	30 MHz – 700 MHz	$0.06 + 0.020\cdot\Gamma + 0.008\cdot\Gamma^2$	Nominal impedance 50 Ω at nominal -10 dBm RF power	
		700 MHz – 1500 MHz	$0.07 + 0.020\cdot\Gamma + 0.013\cdot\Gamma^2$		
		1500 MHz – 3000 MHz	$0.08 + 0.020\cdot\Gamma + 0.013\cdot\Gamma^2$		

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RF 3 0	HIGH FREQUENCY POWER			1, 3)	W
	Calibration Factors of Power Sensors	9 kHz – 10 MHz	0.05 dB	0 dBm nominal	
		10 MHz – 3 GHz	0.06 dB	0 dBm nominal	
		3 GHz – 6 GHz	0.07 dB	0 dBm nominal	
		6 GHz – 10 GHz	0.07 – 0.09 dB	0 dBm nominal	
		10 GHz – 18 GHz	0.09 dB	0 dBm nominal	
		10 MHz – 2 GHz	0.06 dB	-30 dBm nominal	
		2 GHz – 6 GHz	0.07 dB	-30 dBm nominal	
		6 GHz – 10 GHz	0.07 – 0.10 dB	-30 dBm nominal	
		10 GHz – 18 GHz	0.10 dB	-30 dBm nominal	
	Linearity of RF power				
	0 – -10 dBm	9 kHz – 6 GHz	0.04 dB		
	0 – -20 dBm	9 kHz – 6 GHz	0.05 dB		
	0 – -30 dBm	9 kHz – 6 GHz	0.07 dB		
	0 – -40 dBm	10 MHz – 6 GHz	0.09 dB		
	0 – -50 dBm	10 MHz – 6 GHz	0.09 dB		
	0 – -60 dBm	10 MHz – 6 GHz	0.15 dB		
	Absolute power -60 to +20 dBm			2, 3)	
		9 kHz – 10 MHz	0.06 dB	0 dBm nominal	
		10 MHz – 6 GHz	0.07 dB	0 dBm nominal	
		6 GHz – 10 GHz	0.10 dB	0 dBm nominal	
		10 GHz – 18 GHz	0.12 dB	0 dBm nominal	

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	Absolute power -60 to +20 dBm			2, 3)	W
		10 MHz – 6 GHz	0.07 dB	-30 dBm nominal	
		6 GHz – 10 GHz	0.10 dB	-30 dBm nominal	
		10 GHz – 18 GHz	0.14 dB	-30 dBm nominal	
	Absolute broadband power, 0 to +45 dBm				W
		9 kHz – 6 GHz	0.6 dB 1.0 dB	RadiField All other DUTs	
	Frequency response of power measuring devices			2, 3)	W
		9 kHz – 10 MHz	0.05 dB	0 dBm nominal	
		10 MHz – 3 GHz	0.06 dB	0 dBm nominal	
		3 GHz – 6 GHz	0.07 dB	0 dBm nominal	
		6 GHz – 10 GHz	0.07 – 0.10 dB	0 dBm nominal	
		10 GHz – 18 GHz	0.10 dB	0 dBm nominal	
		10 MHz – 3 GHz	0.06 dB	-30 dBm nominal	
		3 GHz – 6 GHz	0.07 dB	-30 dBm nominal	
		6 GHz – 10 GHz	0.07 – 0.10 dB	-30 dBm nominal	
		10 GHz – 18 GHz	0.10 dB	-30 dBm nominal	
	Response of CISPR receivers				W
	QP and AV	9 kHz - 1 GHz	0.3 dB		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	Bandwidth of RBW filters				W
	1 Hz to 10 MHz	9 kHz - 2.4 GHz	0.8 + 0.02·BW		
	1 Hz to 10 MHz	10 MHz - 18 GHz	0.08 + 0.02·BW		
RF 5 0	ELECTRICAL / MAGNETIC FIELD QUANTITIES /EMC				W
	Electrical Field Strength 1 – 200 V/m	9 kHz – 30 MHz	0.5 – 0.6 dB	Temcell 4)	
		30 MHz – 75 MHz	0.6 – 1.3 dB		
		75 MHz – 200 MHz	1.3 dB		
	Electrical Field Strength 1 – 100 V/m	200 MHz – 1 GHz	1.2 dB	Anechoic Chamber	
		1 GHz – 8 GHz	1.1 dB		
		8 GHz – 12 GHz	1.2 dB		
		12 GHz –15 GHz	1.2 - 1.5 dB		
		15 GHz – 18 GHz	1.5 dB		
		18 GHz – 40 GHz	2.4 dB		
	Antenna factor				W
	ANSI C63.5 CISPR 16-1-6	30 MHz – 5 GHz	0.8 dB	OATS, Standard Site method 5)	
	ANSI C63.5 CISPR 16-1-6	30 MHz – 1 GHz	0.8 dB	OATS, Reference antenna method 5)	
	Antenna symmetry - Dipole - Biconical - Hybrid	30 MHz – 1 GHz	0.25 dB	OATS ANSI C63.5 CISPR 16-1-4	

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	Quasi Free Space	20 MHz – 100 MHz	0.9 dB	Free Space Environment, Three Antenna Method 5)	W
		100 MHz – 200 MHz	0.8 dB		
		200 MHz – 5 GHz	0.7 dB		
		1 GHz – 10 GHz	1.4 dB	Full Anechoic Room, Three Antenna Method 4)	
		10 GHz – 12 GHz	1.4 dB – 2.1 dB		
		12 GHz – 18 GHz	2.1 dB		
	SAE ARP 958	20 MHz – 100 MHz	0.9 dB	For military or automotive use 5)	W
		100 MHz – 200 MHz	0.8 dB		
		200 MHz – 5 GHz	0.7 dB		
	Shielding Effectiveness			According to EN50147 and Mil Std 285 5)	O
	Magnetic Field 100dB	10 kHz – 30 MHz	± 5 dB		
	Electric Field 120 – 150 dB	10 MHz – 300 MHz	± 5 dB		
	Plane wave 110 – 140 dB	30 MHz – 1 GHz	± 5 dB		
	Plane wave 110 – 140 dB	1 GHz – 18 GHz	± 6 dB		
	Normalized Site Attenuation			According to CISPR 16-1-4 using broadband antennae Horizontal and vertical polarization, distance between 3 m and 30 m 5)	O
	NSA	30 MHz – 1000 MHz	± 1.6 dB		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	Site Voltage Standing Wave Ratio			According to CISPR 16-1-4 using reciprocal method 4)	O
	S_{VSWR}	1 GHz – 18 GHz	± 2.0 dB		
	Field Uniformity			According to IEC 61000-4-3 4)	O
	Forward Power	80 MHz – 18 GHz	± 1.3 dB		
	Field Uniformity	80 MHz – 18 GHz	± 1.7 dB		
	Surge generators and coupling/decoupling networks waveform surge voltage			According to EN 61000-4-5 1.2/50 µs pulse 10/700 µs pulse	W, O
	0 V – 550 V		6.7 V + 0.022·*U* 6.7 V + 0.025·*U*	Coupling/decoupling networks for AC/DC power supply circuits only in combination with appropriate surge generator	W O
	0 V – 1.1 kV		13.4 V + 0.022·*U* 13.4 V + 0.025·*U*		W O
	0 V – 2.8 kV		33.5 V + 0.022·*U* 33.5 V + 0.025·*U*		W O
	0 V – 5.5 kV		67 V + 0.022·*U* 67 V + 0.025·*U*		W O
	Waveform surge current				W, O
	Current amplitude			1.2/50 µs pulse 10/700 µs pulse 0.5/700 µs pulse	
	0 – 15 A		0.18 + 0.022 * I 0.18 + 0.029 * I	Measurements at coupling/decoupling network input, output; coupling modes line to neutral, line to earth and neutral to earth	W O
	0 – 30 A		0.36 + 0.022 * I 0.36 + 0.029 * I		W O
	0 – 60 A		0.72 + 0.022 * I 0.72 + 0.029 * I		W O

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	0 – 150 A		1.8 + 0.022 * I 1.8 + 0.029 * I		W O
	0 – 300 A		3.6 + 0.022 * I 3.6 + 0.029 * I		W O
	0 – 600 A		7.2 + 0.022 * I 7.2 + 0.029 * I		W O
	0 – 1500 A		18 + 0.022 * I 18 + 0.029 * I		W O
	0 – 3000 A		36 + 0.022 * I 36 + 0.029 * I		W O
	Front time. Voltage				W, O
	1.2/50 µs	0.65 – 1.75 µs	0.08 µs	4)	
	10/700 µs	5.5 – 15.5 µs	0.5 µs		
	Front time. current				W, O
	1.2/50 µs	6.4 – 9.6 µs 1.4 – 3.6 µs	0.18 µs 0.07 µs	line – line line - PE	
	10/700 µs	3.5 – 6.5µs	0.27 µs		

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	Duration. Voltage			4)	W,O
	1.2/50 µs	35 µs – 65 µs	1.0 µs		
	10/700 µs	490 - 910 µs	14µs		
	Pulse duration time Current			4)	W, O
	1.2/50 µs	11 - 21 µs	0.23 µs	Current, line to line	
		14 - 36 µs	0.23 µs	Current, line to earth	
	10/700 µs	210 - 390 µs	6 µs		
	0.5/700 µs	210 - 390 µs	6 µs		
	EFT/burst generators waveform (im)pulse. voltage into 50 ohms			According to EN 61000-4-4 (July 2004)	W, O
	0 V – 150V		2.0 V + 0.022·*U* 2.0 V + 0.025·*U*	4)	W O
	0 – 300 V		4.0 V + 0.022·*U* 4.0 V + 0.025·*U*	4)	W O
	0 – 600 V		8.0 V + 0.022·*U* 8.0 V + 0.025·*U*	4)	W O
	0 – 1.5 kV		20 V + 0.022·*U* 20 V + 0.025·*U*	4)	W O
	0 – 3 kV		37 V + 0.022·*U* 37 V + 0.025·*U*	4)	W O

HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	EFT/burst generators Waveform pulse voltage into 1 kΩ				W, O
	0 V – 500 V		6 V + 0.045·*U* 6 V + 0.048·*U*	4)	W O
	0 V – 1 kV		12 V + 0.045·*U* 12 V + 0.048·*U*	4)	W O
	0 V – 2 kV		24 V + 0.045·*U* 24 V + 0.048·*U*	4)	W O
	0 V – 5 kV		60 V + 0.045·*U* 60 V + 0.048·*U*	4)	W O
	Rise time (10%-90%) 3 ns to 7 ns		0.3 ns	4)	W,O
	Pulse duration time (50%-50%) 30 ns to 70 ns		2.0 ns	4)	W,O
	Repetition rate			4)	W,O
	5 µs – 15 µs		0.15 µs		
	150 µs – 600 µs		2.5 µs		
	Burst duration			4)	W,O
	10 ms to 20 ms		0.5µs + 0.0005 * T		
	Burst period			4)	
	200 ms to 400 ms		500 µs		W,O

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	ESD Simulators Waveform discharge current				W
	First peak current		± 7%	Networks and standard: 150pF / 330 Ω IEC61000-4-2 (2008-12)	
	Rise time		± 15%		
	Current at t1 and t2		± 7%		
	ESD Simulators Waveform discharge current				
	First peak current 0 – 10 A 0 – 20 A 0 – 50 A		 0.08 + 0.032*I 0.16 + 0.032*I 0.4 + 0.032*I	Networks and standard: 150pF / 330 Ω IEC61000-4-2 (1995-01) ISO10605 (2008-07)	
	Rise time 0.5 – 1.2 ns		0.08 ns	330pF / 330 Ω ISO10605 (2008-07)	
	Current at t1 and t2 0 – 10 A 0 – 20 A 0 – 50 A		 0.08 + 0.023*I 0.16 + 0.023*I 0.4 + 0.023*I		

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HCS code	Measured quantity, Instrument, Measure	Range	CMC[1]	Remarks	Location
	ESD Simulators Waveform discharge current				W
	First peak current 0 – 1.0 A 0 – 2.0 A 0 – 5.0 A		0.08 + 0.032*I 0.16 + 0.032*I 0.4 + 0.032*I	Networks and standard: 150pF / 2000 Ω 330pF / 2000 Ω ISO10605 (2008-07)	
	Rise time 0.5 – 1.2 ns		0.08 ns		
	Current at t1 and t2 0 – 1.0 A 0 – 2.0 A 0 – 5.0 A		0.008 + 0.023*I 0.02 + 0.023*I 0.04 + 0.023*I		
TF 0 0	TIME AND FREQUENCY				W
TF 2 1	Frequency				
	10 mHz - 2.7 GHz		$(8\cdot10^{-10}/\tau + 1.8\cdot10^{-10})\cdot f$	Measuring, 10 ms ≤ τ ≤ 400s	
	10 mHz – 10 Hz		$3\cdot10^{-5}\cdot f$	Generating	
	10 Hz – 100 kHz		$(1\cdot10^{-5}/\tau)\cdot f$	Generating, 10 ms ≤ τ ≤ 400s	
	100 kHz – 2.16 GHz		$(1\cdot10^{-9}/\tau + 1.8\cdot10^{-10})\cdot f$	Generating, 10 ms ≤ τ ≤ 400s	
TF 2 2	Time interval				
	0.5 ns – 10 µs		$(1.5\cdot10^{-4})\cdot t + 15ps$	Generating	
	10 µs – 1000 s		$(3\cdot10^{-5})\cdot t$		

The calibrations are carried out at an ambient temperature of (23 ± 2)°C and a relative humidity of (50 ± 10) %, with an exception for calibrations marked 4 or 5.

1. $|\Gamma dut| < 0.02$
2. $|\Gamma dut| < 0.2$
3. All calibrations are based on equipment using N-type connectors.
4. The calibrations are carried out at ambient conditions within (23 ± 7)°C and (50 ± 20) %.
5. The calibrations are carried out at ambient conditions within (20 ± 15)°C and (50 ± 40) %.