

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-15068-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 23.11.2018

Date of issue: 23.11.2018

Holder of certificate:

**Power Diagnostix Systems GmbH
Vaalser Strasse 250, 52074 Aachen**

Calibration in the fields:

Electrical quantities

DC and low frequency quantities

- High voltage quantities ^{a)}
- High voltage impulse quantities
- Impulse charge ^{a)}

^{a)} also On-site calibration

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

Annex to the accreditation certificate D-K-15068-01-00

Permanent Laboratory

Calibration and measurement capabilities(CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability ¹⁾	Remarks
Impulse charge	1 pC to 50 nC	IEC 60270:2000, AMD1:2015 CSV	$0,02 \cdot q + 0,2 \text{ pC}$	q = Measured value
Rise time	1 ns to 100 ns	Oscilloscope equivalence mode	$0,02 \cdot t + 1 \text{ ns}$	Rise time: Time between 10%- and 90%-value of amplitude of the increasing and decreasing flank of the charge impulse; t = Measured value
		Oscilloscope real time mode	$0,02 \cdot t + 3 \text{ ns}$	
Duration of impulse	5 ns to 1 ms	Oscilloscope equivalence mode	$0,02 \cdot t + 1 \text{ ns}$	Duration of impulse: Time between 10%- value of amplitude of the increasing and decreasing flank of the charge impulse; t = Measured value
		Oscilloscope real time mode	$0,02 \cdot t + 3 \text{ ns}$	
AC voltage effective value	1 V to 750 V	20 Hz to 1 kHz	$0,005 \cdot U$	U = Measured value
	1 kV to 200 kV	15 Hz to 300 Hz		
DC voltage	0,01 V to 1000 V			
AC voltage parameter of amplitude	5 mV to 10 V	DC to 10 MHz	$0,01 \cdot U$	Standart: Oscilloscope input impedance: 1 M Ω U = Measured value

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of 95 % and have a coverage factor of $k = 2$ unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.

Annex to the accreditation certificate D-K-15068-01-00

On site calibration

Calibration and measurement capabilities(CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability ¹⁾	Remarks
Impulse charge	1 pC to 50 nC	IEC 60270:2000, AMD1:2015 CSV	$0,02 \cdot q + 0,2 \text{ pC}$	$q =$ Measured value
Rise time	1 ns to 100 ns	Oscilloscope equivalence mode	$0,02 \cdot t + 1 \text{ ns}$	Rise time: Time between 10%- and 90%-value of amplitude of the increasing and decreasing flank of the charge impulse; $t =$ Measured value
		Oscilloscope real time mode	$0,02 \cdot t + 3 \text{ ns}$	
Duration of impulse	5 ns to 1 ms	Oscilloscope equivalence mode	$0,02 \cdot t + 1 \text{ ns}$	Duration of impulse: Time between 10%- value of amplitude of the increasing and decreasing flank of the charge impulse; $t =$ Measured value
		Oscilloscope real time mode	$0,02 \cdot t + 3 \text{ ns}$	
AC voltage effective value, peak value	1 V to 750 V	20 Hz to 1 kHz	$0,005 \cdot U$	$U =$ Measured value
	1 kV to 200 kV	15 Hz to 300 Hz		
	1 kV to 500 kV		$0,01 \cdot U$	$U =$ Measured value Measurement in extended range
AC current effective value	1A to 100 A	10 Hz to 300 Hz	$0,005 \cdot I$	$U =$ Measured value
AC voltage parameter of amplitude	5 mV to 10 V	DC to 10 MHz	$0,01 \cdot U$	Standart: Oscilloscope input impedance: $1 \text{ M}\Omega$ $q =$ Measured value

Abbreviations used:

CMC Calibration and measurement capabilities
EURAMET European Association of National Metrology Institutes (EURAMET e.V.)

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of 95 % and have a coverage factor of $k = 2$ unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.

Valid from: 23.11.2018

Date of issue: 23.11.2018

-Translation-