Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 218**

of **KEMA B.V.**
Metering, Protection & Substation Automation Laboratory

This annex is valid from: **19-03-2026** to **01-04-2030** Replaces annex dated: **22-01-2025**

Location(s) where activities are performed under accreditation

Head Office

Klingelbeekseweg 195
6812 DE
Arnhem
The Netherlands

Location	Abbreviation/ location code
Klingelbeekseweg 195 6812 DE Arnhem The Netherlands	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
1. .	Protection relays & substation automation equipment	Functional requirements	EN-IEC 60255-1 IEC 60255-12 IEC 60255-13 EN-IEC 60255-121 EN-IEC 60255-127 EN-IEC 60255-149 EN-IEC 60255-151 IEEE C37.112	ARN
2.		Energizing quantities (Burden test)	EN-IEC 60255-1	
3.		Dimensions of structure	EN-IEC 60255-1 EN-IEC 60297-3-101	

[1] If there is a referral to a code starting with NAW, NAP, EA or IAF, this concerns a scheme mentioned on RvA-BR010-lijst.
If no date or version number is mentioned for a normative document, the accreditation concerns the most current version of the document or scheme.

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

J.A.W.M. de Haas

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4.	Electrical energy meters	**Tests of accuracy requirements** • Limits of error due to variation of the current • Repeatability test • Measurement of meter Initial start-up time • Test of meter constant • Test of Starting current / condition • Test of No-load condition • Tests of pulse outputs & pulse inputs • Tests of Influence quantities	EN 50470-1/2/3 EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 OIML R46	ARN
5.		**Tests of electrical requirements** • Test of power consumption • Test of influence of supply voltage • Test of short-time overcurrents • Test of self-heating	EN 50470-1/2/3 EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 EN-IEC 62052-31 OIML R46	
6.		Durability - Testing of the stability of metrological characteristics by applying elevated temperature	EN-IEC 62059-32-1 OIML R46	
7.		**Tests of functional performance** • Core functional test within voltage and temperature range limits • Functional tests within the limit range of operation. • Interruption to token acceptance • Rejection of duplicate tokens • Rejection of valid tokens when available credit is saturated • Energy register roll-over	EN-IEC 62055-31	
8.		**Tests of timekeeping accuracy** • Test of synchronous clock on a.c. supply • Test of synchronous clock on operation reserve • Test of crystal-controlled clocks on a.c. supplies • Test of crystal-controlled clocks on operation reserve • Test of accuracy of crystal-controlled clocks with temperature. • Test of influence of harmonics • Test of synchronization • Test of switching accuracy	EN-IEC 62055-31 EN-IEC 62054-21 OIML R46	

No.	Material or product	Type of activity[1]	Internal reference number	Location
		Supply control and load control switch tests		
9.	Electrical energy meters	Normal operation test	EN-IEC 62055-31	ARN
10.		Pre-conditioning test	EN-IEC 62052-31	
11.		Electrical endurance test	EN-IEC 62055-31 EN-IEC 62052-31	
12.		Fault current making capacity test	EN-IEC 62055-31	
13.		Verification of the ability to make the rated short-circuit current	EN-IEC 62052-31	
14.		Short-circuit current carrying capacity test	EN-IEC 62055-31	
15.		Verification of the ability to carry the rated operational and stay safe short-time withstand current	EN-IEC 62052-31	
16.		Minimum switched current test	EN-IEC 62055-31 EN-IEC 62052-31	
		Climatic environmental tests		
17.	Electrical energy meters and Protection relays & substation automation equipment	Cold operational test Cold storage test -40°C to +5°C	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 OIML R46 EN-IEC 60068-2-1	ARN
18.		Dry heat operational test Dry heat storage test +5°C to +85°C	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 OIML R46 EN-IEC 60068-2-2	
19.		Change of temperature test -40°C to +85°C	IEC 60255-1 EN-IEC 60068-2-14	
20.		Damp heat cyclic test (12 h + 12 h) +40°C and +55°C up to 100% relative humidity	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 OIML R46 EN-IEC 60068-2-30	

No.	Material or product	Type of activity[1]	Internal reference number	Location
21.	Electrical energy meters and Protection relays & substation automation equipment	Damp heat steady state test +30°C, +40°C and +55°C 85% or 93% relative humidity	EN-IEC 60255-1 OIML R46 EN-IEC 60068-2-78	ARN
		Electrical safety tests and measurements		
22.	Electrical energymeters and Protection relays & substation automation equipment	Creepage and clearance measurements	EN-IEC 60255-27 EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31	ARN
23.		Mechanical • Mechanical strength of housing test (springhammer test) • Sharp edges • Provisions for lifting and carrying	EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 EN-IEC 60068-2-75	
24.		Spread of fire • Abnormal operation and single fault conditions • Limited-energy circuit • Batteries	EN-IEC 60255-27 EN-IEC 62052-31	
25.		Dielectric voltage test and insulation resistance measurement test	EN-IEC 60255-27	
26.		Degree of protection provided by enclosures (dust and water tests)	EN-IEC 60255-27 EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 OIML R46 EN-IEC 60529	
27.		Temperature and heat tests • Test of influence of heating • Temperature tests	EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 EN-IEC 60085	

No.	Material or product	Type of activity[1]	Internal reference number	Location
28.	Electrical energymeters and Protection relays & substation automation equipment	Test of immunity to earth fault / long term overvoltage withstand	EN-IEC 62052-11 EN 50470-2/3 EN-IEC 62052-31 OIML R46	ARN
29.		Test of Insulation properties (Dielectric tests): • impulse voltage • a.c. / d.c voltage	EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 EN 50470-1/2/3 EN-IEC 62052-31 OIML R46 EN-IEC 60060-1 HD 588.1 S1	
30.		Protection against electrical shock • Accessible parts test • Limit values for accessible parts	EN-IEC 60255-27 EN-IEC 62052-31	
31.		Impulse voltage	EN-IEC 60255-27	
32.		Protective bonding resistance	EN-IEC 60255-27 EN-IEC 62052-31	
33.		Durability of markings	EN-IEC 62052-31 OIML R46	
34.		Tests on terminals • manual test • flexion and pull test	EN-IEC 62052-31	
35.		Surge test • Surge test with supply voltage • Surge voltage withstand across open contacts	EN-IEC 62052-31	
		Mechanical tests		
36.	Electrical energy meters and Protection relays & substation automation equipment	Shock test Maximum acceleration: 11500 m/s^2 Nominal puls time: 1 - 65 ms Maximum (peak-peak) velocity:13 m/s	EN-IEC 60068-2-27 EN-IEC 62052-11 EN 50470 EN-IEC 60255-21-2 OIML R46	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
37.	Electrical energy meters and Protection relays & substation automation equipment	Vibration test Maximum acceleration: 1120 m/s^2 Maximum velocity: 1,8 m/s Maximum displacement: 60 Frequency range: 1 – 2000 Hz	EN-IEC 60068-2-6 EN-IEC 62052-11 EN 50470-1 EN-IEC 60255-21-1 EN-IEC 60255-21-3 OIML R46	ARN
38.	Electrical energy meters	Token carrier acceptor test Keypad interface test Token carrier acceptor interface test	EN-IEC 62055-31	
EMC.I		**EMC Immunity tests**		
EMC.I.21	Electric and electronic equipment	Electrostatic discharge immunity (ESD) Contact discharge up to 30 kV Air discharge up to 30 kV	EN-IEC 60255-26 EN-IEC 62052-11 EN 50470-1 OIML R46 IEEE C37.90.3 EN-IEC 61000-4-2	ARN
EMC.I.22		Electrical fast transient / burst immunity (EFT) 1 and 3 phases 0,25 – 4 kV	EN-IEC 60255-26 EN-IEC 62052-11 EN 50470-1 OIML R46 IEEE C37.90.1 EN-IEC 61000-4-4	
EMC.I.23		Surge immunity 1 and 3 phases 0,25 – 8 kV	EN-IEC 60255-26 EN-IEC 62052-11 EN 50470-1 OIML R46 EN-IEC 61000-4-5	
EMC.I.07		Immunity to conducted disturbances, induced by radio-frequency fields 3 V - 10 V 150 kHz – 80 MHz	EN-IEC 60255-26 EN-IEC 62052-11 OIML R46 EN-IEC 61000-4-6 EN 50470-1	
EMC.I.24		Power frequency magnetic field immunity, 50/60 Hz 3 A/m – 1000 A/m	EN-IEC 60255-26 EN 50470-1 OIML R46 EN-IEC 61000-4-8	

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No.	Material or product	Type of activity[1]	Internal reference number	Location
EMC.I.26	Electric and electronic equipment	Voltage dips, short interruptions and voltage variations Immunity 1 , 2 or 3 phase 0° - 360°	EN-IEC 60255-26 EN 50470-1 EN-IEC 61000-4-11 EN-IEC 62052-11 OIML R46	ARN
EMC.I.08		Immunity to conducted disturbances Common mode 1 - 30 V (continuous) 10 - 300 V (short duration) 15 Hz – 150 kHz; 3 – 30 V	EN-IEC 60255-26 EN-IEC 61000-4-16	
EMC.I.30		DC voltage ripple Immunity 0 – 20% 100/120 Hz 0 –300 Vdc	EN-IEC 60255-26 EN-IEC 61000-4-17	
EMC.I.38		Damped oscillatory wave 100 kHz, 1 MHz; 0,25 –2,5 kV 3 MHz, 10 MHz, 30 MHz 0,5 kV – 4,0 kV	EN-IEC 60255-26 IEEE C37.90.1 EN-IEC 61000-4-18 EN-IEC 62052-11 EN 50470-1 OIML R46	
EMC.I.37		DC Voltage dips, short interruptions, and voltage variations immunity 20 – 300 Vdc Up to 10 A	EN-IEC 60255-26 EN-IEC 61000-4-29	
EMC.I.25		Pulsed magnetic field immunity 100 – 1000 A/m	EN-IEC 61000-4-9	
EMC.I.33		Damped oscillatory magnetic field immunity 10 – 100 A/m	EN-IEC 61000-4-10	
EMC.I.36		Ringwave immunity test 1 and 3 phases 0,25 to 2 kV Line-to-Line 0,5 to 4 kV line-to-ground	EN-IEC 61000-4-12	
EMC.I.45		Immunity to conducted, differential mode disturbances and signaling 2 kHz to 150 kHz at a.c. power ports 0,1 to 20 Vrms Diff. voltage testing 0,5 to 4 Arms Diff. current testing	EN-IEC 61000-4-19 NPR-CLC/TR 50579	

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No.	Material or product	Type of activity[1]	Internal reference number	Location
EMC.I.14	Electric and electronic equipment	Radiated Immunity GTEM method 80 MHz to 2 GHz; 10 V/m – 30 V/m 2 GHz to 6GHz; 3 V/m - -10 V/m	EN-IEC 61000-4-20	ARN
EMC.E		**Electromagnetic Compatibility Emission (EMC)**		
EMC.E.34	Electric and electronic equipment	Conducted emission Voltage method (AAN) 150 kHz – 30 MHz	EN-IEC 60255-26 CISPR 32, CISPR 22 EN 55032, EN 55022 EN-IEC 62052-11 EN 50470-1	ARN
EMC.E.02		Conducted emission Voltage method (AMN) 150 kHz – 30 MHz	EN-IEC 60255-26 CISPR 32, CISPR 22 EN 55032, EN 55022 EN-IEC 62052-11 EN 50470-1	
Product standards containing one or more of the above mentioned test activities are listed below. **Accreditation is only applicable to the tests mentioned above.**				
Product standards for EMC				
EMC.S.03	EMC Testing Electrical Energy Meters	EMC Immunity No. EMC.I.07, EMC.I.08, EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.24, EMC.I.25, EMC.I 26, EMC.I.30, EMC.I.33, EMC.I.36, EMC.I 37, EMC.I.38, EMC.I.45	EN 50470-1/2/3 EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 Directive 2014/32/EU annex I, annex V MI-003	ARN
EMC.S.08	EMC Testing Protection relays & substation automation equipment	EMC Immunity No. EMC.I.07, EMC.I.08, EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.24, EMC.I.25, EMC.I 26, EMC.I.30, EMC.I.33, EMC.I.36, EMC.I 37, EMC.I.38, EMC.I.45 EMC Emission No. EMC.E.34 until EMC.E.02	EN-IEC 60255-1 EN-IEC 60255-26 IEEE C37.90.1/3	

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Product standards containing one or more of the above mentioned test activities are listed below. Accreditation is only applicable to the tests mentioned above.				
1.	Protection relays & substation automation equipment	Above listed methods No. 17, 18, 19, 20, 21, 22, 24, 25, 26, 31, 32, 33, 34, EMC Immunity No.EMC.I.24, EMC.I.21, EMC.I.08, EMC.I.23, EMC.I.38, EMC.I.22, EMC.I.07, EMC.I.26, EMC.I.37, EMC.I.30 EMC Emission No. EMC.E.34 until EMC.E.02	EN-IEC 61850-3	ARN
2.	Protection relays & substation automation equipment	Above listed methods No. 25, 31, EMC Immunity No. EMC.I.24, EMC.I.21, EMC.I.23, EMC.I.38, EMC.I.22, EMC.I.07, EMC.I.08, EMC.I.33	IEEE 1613, IEEE 1613.1	
3.	Electrical energy meters	Above listed methods No. 4, 5, 7, 8, 9, 11, 12, 14, 16, 17, 18, 20, 22, 23, 26, 27, 28, 29, 33, 34, 35, 36, 37, EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.07, EMC.I.26, EMC.E34	EN-IEC 62055-31	