

# Electrical Equipment / Machine / Switchboard safety

## MI 3340 **AlphaEE XA**



The new cutting-edge AlphaEE XA, is designed with an innovative housing that redefines the ease and comfort of electrical equipment testing. The instrument is engineered for robust performance and perfect balance, the AlphaEE XA ensures effortless **one-handed operation**, making it an indispensable tool for professionals on the go. The user-friendly interface provides the flexibility of a touch screen or function keys catering to your preferred method of operation. This dual option enhances usability, ensuring a seamless experience whether you're conducting routine checks or detailed diagnostics. Designed with service organizations in mind, the AlphaEE XA boasts specialized measuring functions that cater to a wide range of applications. It offers both periodic testing and testing after repair with pre-defined AutoSequences and single measurements for on-the-spot servicing, providing unparalleled versatility. AlphaEE XA boosts the future of electrical equipment testing, with its unparalleled convenience, advanced functionality, and exceptional performance, all encapsulated in a sleek, user-centric design.

### MEASURING FUNCTIONS

- **EN 50678 / EN 50699**
- Visual inspections;
- Auto test (Continuity + Insulation resistance + Alternative leakage)
- Continuity of protective earth 200mA;
- Insulation Resistance (Riso, Riso-S) 50V, 100V, 250V, 500V;
- Protective conductor current (Direct, Residual, Alternative);
- Touch leakage current (Direct, Alternative);
- Leakage current produced by a floating input, PE current (Direct, Residual);
- Leakage current produced by a floating input, Touch current (Direct);
- Leaks & Power (Itou, Idiff, P, S, Q, PF, THDu, THDi, Cos $\phi$ , I, U);
- Point to Point Leakage current (Direct)
- Power (P, S, Q, PF, THDu, THDi, Cos $\phi$ , I, U);
- PRCD test, (2 pole, 3 pole, K/ Di (varistor), S (3-pole)), S+;
- PRCD test (PE conductor, Open conductor, PE probe);
- RCD test (type A, AC, B, B+, F);
- IC-CPD test (EV-RCD, PE conductor);
- Voltage, SELV/PELV;
- Socket test;
- Polarity / Active polarity test;
- EVSE Diagnostic test;
- Clamp current;\*;
- Functional inspections.

\* (With optional A 1472).

### KEY FEATURES

- **Ergonomic housing:** Experience ultimate convenience with our ergonomic housing, designed for effortless single-handed operation.
- **Li-Ion battery:** Enjoy extended use and rapid recharging with Li-Ion battery, leveraging advanced Li-Ion technology for longer operation times and quicker charge cycles.
- **Pre-defined AUTOSEQUENCE<sup>®</sup>s:** According to: **EN 50678, EN 50699, EV-Cables, P-RCDs**, Devices with **Floating inputs**, Audio/video, information and communication technology **EN 62368-1**.
- **Insulation resistance test (50V, 100V):** Lower test voltages at insulation resistance tests make it easy to safely evaluate sensitive electronic equipment or devices that may be damaged by higher test voltages.
- **IC-CPD:** Easily test Mode 2 and Mode 3 EV cables with the help of supported compatible adapters.
- **Active polarity test:** Ensure flawless functionality with our active polarity test, designed to verify devices requiring mains voltage for operation, including P-RCD switches, smart extension leads, and electric vehicle charging cables.
- **Colour touch screen:** Offers users a quick overview and effortless parameter adjustment, enhancing both efficiency and user experience.
- **Auto Continuity:** The **Auto start** feature enables a rapid and efficient assessment of devices with a larger number of metal parts that require inspection.

- **Socket test:** a socket test function empowers users to troubleshoot connection points effectively. With this feature, you can verify mains voltage, and the integrity of "L / N / PE" wiring, ensuring reliable and accurate confirmation.
- **Standby power:** Testing of Standby power (Commission regulation No 2023/826).
- **Support for PRCD testing:** Support for all types of PRCDs, including 2-pole, 3-pole, K/Di (varistor), S (3 pole) and testing with the PE probe.
- **BlackBox protocol:** The primary purpose of the Black Box protocol is to enable execution of Single tests and AutoSequences via remote applications.
- **PC SW Metrel ES Manager:** Enables creation of test structures, user-defined AUTOSEQUENCE<sup>®</sup>s, professional test reports and data transfer for archiving.
- **aMESM Android SW:** Enables QR code scanning, and uploading of pre-prepared user-defined AUTOSEQUENCE<sup>®</sup>s.

FUNCTION		MEASURING RANGE	RESOLUTION	ACCURACY
<b>Continuity / Protective earth resistance</b>				
<sup>1</sup> Continuity (200 mA)	R	0.00 Ω ... 19.99 Ω 20.0 Ω ... 99.9 Ω 100.0 Ω ... 199.9 Ω 200 Ω ... 1999 Ω	0.01 Ω 0.1 Ω 0.1 Ω 1 Ω	±(2 % of reading + 2 D) ± 3 % of reading ± 5 % of reading ± 5 % of reading
<b>Insulation Resistance (Riso, Riso-S)</b>				
<sup>2</sup> Insulation resistance, Insulation resistance – S (50 V, 100 V)	Riso	0.00 MΩ ... 19.99 MΩ	0.1 MΩ	±(3 % of reading + 2 D)
<sup>2</sup> Insulation resistance, Insulation resistance – S (250 V, 500 V)	Riso - S	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 99.9 MΩ 100.0 MΩ ... 199.9 MΩ	0.1 MΩ 0.1 MΩ 0.1 MΩ	±(3 % of reading + 2 D) ± 5 % of reading ± 10 % of reading
Output voltage	Um	0 V ... 600 V	1 V	±(3 % of reading + 2 D)
<b>Substitute Leakage Current, Substitute leakage current – S</b>				
<sup>3</sup> Substitute Leakage Current, Substitute leakage current – S	Isub	0.00 mA ... 1.99 mA	0.01 mA	±(3 % of reading + 3 D)
	Isub - S	2.00 mA ... 19.99 mA	0.01 mA	± 5 % of reading
<b>Cont+Ins+Sub</b>				
		Refer to technical specification for Continuity (R), Insulation Resistance (Riso) and Sub-Leakage current (Isub).		
<b>Differential Leakage</b>				
<sup>4</sup> Differential leakage current	Idiff	0.00 mA ... 1.999 mA 2.00 mA ... 19.99 mA	0.01 mA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Power	P	0 W ... 19.99 W 20 W ... 199.9 W 200 W ... 1999 W 2.00 kW ... 3.70 kW	0.01 W 0.1 W 1 W 10 W	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
<b>Differential leakage current (with A 1830)</b>				
<sup>4</sup> Differential leakage current	Idiff	0.10 mA ... 1.99 mA 2.00 mA ... 19.99 mA	0.01 mA 0.01 mA	±(5 % of reading + 20 D) ±5 % of reading
<b>Touch Leakage</b>				
<sup>5</sup> Touch leakage current	Itou	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Power	P	0 W ... 19.99 W 20 W ... 199.9 W 200 W ... 1999 W 2.00 kW ... 3.70 kW	0.01 W 0.1 W 1 W 10 W	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
<b>Ipe Leakage</b>				
<sup>5</sup> PE leakage current	Ipe	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Power	P	0 W ... 19.99 W 20 W ... 199.9 W 200 W ... 1999 W 2.00 kW ... 3.70 kW	0.01 W 0.1 W 1 W 10 W	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
<b>Point to point leakage</b>				
<sup>5</sup> Point to point leakage	Ileak	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
<b>Ipe+Ifloating input (Ipe+Ifi)</b>				
<sup>5</sup> Pe leakage current	Ipe	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
<sup>4</sup> Differential leakage current	Idiff	0.00 mA ... 1.999 mA 2.00 mA ... 19.99 mA	0.01 mA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
<sup>6</sup> Ifi	Ifi	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Ipe+Ifi / Idiff+Ifi	Ipe+Ifi / Idiff+Ifi	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	Calculated values
<b>Itouch+Ifloating input (Itou+Ifi)</b>				
<sup>5</sup> Touch leakage current	Itou	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
<sup>6</sup> Ifi	Ifi	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Itou+Ifi	Itou+Ifi	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 μA 0.01 mA	Calculated values
<b>Power</b>				
Power (active)	P	0 W ... 19.99 W 20 W ... 199.9 W 200 W ... 1999 W 2.00 kW ... 3.70 kW	0.01 W 0.1 W 1 W 10 W	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
Power (apparent)	S	0 VA ... 19.99 VA 20 VA ... 199.9 VA 200 VA ... 1999 VA 2.00 k VA ... 3.70 k VA	0.01 VA 0.1 VA 1 VA 10 VA	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading

Power (reactive)	Q	± (0.00 var ... 19.99 var) ± (20.0 var ... 199.9 var) ± (200 var ... 1999 var) ± (2.00 k var ... 3.70 k var)	0.01 var 0.1 var 1 var 10 var	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
Power factor	PF	0.00 i ... 1.00 i 0.00 c ... 1.00 c	0.01	±(5 % of reading + 5 D)
Total Harmonic Distortion (voltage)	THDU	0.0 % ... 99.9 %	0.1 %	±(5 % of reading + 5 D)
Total Harmonic Distortion (current)	THDI	0 mA ... 999 mA 1.00 mA ... 16.00 A	1 mA 10 mA	±(3 % of reading + 5 D) ± 5 % of reading
Cosine fi	Cos fi	0.00 i ... 1.00 i 0.00 c ... 1.00 c	0.01	±(5 % of reading + 5 D)
Current	I	0 mA ... 999 mA 1.00 A ... 16.00 A	1 mA 10 mA	±(3 % of reading + 5 D) ± 3 % of reading
Voltage	U	0.0 V ... 199.9 V 200 V ... 264 V	0.1 V 1 V	±(3 % of reading + 10 D) ± 3 % of reading
<b>Leak's &amp; Power</b>				
<sup>5</sup> Touch leakage current	Itou	0.000 mA ... 1.999 mA 2.00 mA ... 19.99 mA	1 µA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
<sup>4</sup> Differential leakage current	Idiff	0.00 mA ... 1.999 mA 2.00 mA ... 19.99 mA	0.01 mA 0.01 mA	±(3 % of reading + 3 D) ± 5 % of reading
Power (active)	P	0 W ... 19.99 W 20 W ... 199.9 W 200 W ... 1999 W 2.00 kW ... 3.70 kW	0.01 W 0.1 W 1 W 10 W	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
Power (apparent)	S	0 VA ... 19.99 VA 20 VA ... 199.9 VA 200 VA ... 1999 VA 2.00 k VA ... 3.70 k VA	0.01 VA 0.1 VA 1 VA 10 VA	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
Power (reactive)	Q	± (0.00 var ... 19.99 var) ± (20.0 var ... 199.9 var) ± (200 var ... 1999 var) ± (2.00 k var ... 3.70 k var)	0.01 var 0.1 var 1 var 10 var	±(5 % of reading + 5 D) ± 5 % of reading ± 5 % of reading ± 5 % of reading
Power factor	PF	0.00 i ... 1.00 i 0.00 c ... 1.00 c	0.01	±(5 % of reading + 5 D)
Total Harmonic Distortion (voltage)	THDU	0.0 % ... 99.9 %	0.1 %	±(5 % of reading + 5 D)
FUNCTION	TEST PRIN- CIPLE	0 mA ... 999 A 1.00 mA ... 16.00 A	1 mA 10 mA	±(3 % of reading + 5 D) ± 5 % of reading
Cosine fi	Cos fi	0.00 i ... 1.00 i 0.00 c ... 1.00 c	0.01	±(5 % of reading + 5 D)
Current	I	0 mA ... 999 A 1.00 A ... 16.00 A	1 mA 10 mA	±(3 % of reading + 5 D) ± 3 % of reading
Voltage	U	0.0 V ... 199.9 A 200 V ... 264 V	0.1 V 1 V	±(3 % of reading + 10 D) ± 3 % of reading
<b>PRCD test</b>				
<sup>7</sup> Trip-out time		0 ms ... 300 ms (½xIΔN) 0 ms ... 300 ms (40 ms*) (IΔN) 0 ms ... 40 ms (5xIΔN)	1 ms 1 ms 1 ms	± 3 ms ± 3 ms ± 3 ms
<sup>7</sup> Ttip-out current	IΔ	0.2x IΔN ... 2.2x IΔN	0.05x IΔN	± 0.1x IΔN
<b>RCD test</b>				
<sup>8</sup> Trip-out time	tΔN	0 ms ... 300 ms (½xIΔN) 0 ms ... 300 ms (40 ms*) (IΔN) 0 ms ... 40 ms (5xIΔN)	1 ms 1 ms 1 ms	± 3 ms ± 3 ms ± 3 ms
Contact voltage	Uc	0.0 V ... 19.9 V 20.0 V ... 99.9 V	0.1 V 0.1 V	(-0 %/+15 %) of reading ± 20 D (-0 %/+15 %) of reading
<b>PE conductor (PRCD)</b>				
<sup>9</sup> PE conductor (Tye = 2pole, 3 pole, S(3 pole), S+)	R	0.00 Ω ... 19.99 Ω	0.01 Ω	±(2 % of reading + 2 D)
<b>FUNCTION</b>		<b>TEST PRINCIPLE</b>		
<b>Open conductor (PRCD)</b>	Mains voltage is applied to the mains test socket. Disconnection of the L, N and PE connections is performed inside the instrument. There is a 'PASS' if the PRCD trips.			
<sup>10</sup> PRCD PE probe test	Mains voltage is applied to the mains test socket. A safe voltage sufficiently high to activate the protection circuit in the PRCD is applied to the P/S terminal.			

FUNCTION	RESULT	TEST CURRENT	RANGE	RESOLUTION	ACCURACY	
<b>EV RCD test</b>						
<sup>11</sup> Trip-out time	t $\Delta$ N	a.c. pulse d.c. (A)	1/2xI $\Delta$ N I $\Delta$ N 2xI $\Delta$ N 5xI $\Delta$ N	0.0 ms ... 300.0 ms 0.0 ms ... 300.0 ms 0.0 ms ... 150.0 ms 0.0 ms ... 40.0 ms	0.1 ms 0.1 ms 0.1 ms 0.1 ms	$\pm$ 3 ms $\pm$ 3 ms $\pm$ 3 ms $\pm$ 3 ms
		Smooth d.c.	1/2xI $\Delta$ N I $\Delta$ N 10xI $\Delta$ N	0.0 ms ... 999.9 ms 1.0 s ... 9.99 s 0.0 ms ... 999.9 ms 1.0 s ... 9.99 s 0.0 ms ... 300.0 ms	0.1 ms 0.01 s 0.1 ms 0.01 s 0.1 ms	$\pm$ 3 ms $\pm$ 30 ms $\pm$ 3 ms $\pm$ 30 ms $\pm$ 3 ms
<sup>11</sup> Trip-out current		I $\Delta$ N	a.c. pulse d.c. (A) smooth d.c.	0.2x I $\Delta$ N ... 1.1x I $\Delta$ N 0.2x I $\Delta$ N ... 1.5x I $\Delta$ N 1.5 mA ... 6.0 mA	0.05x I $\Delta$ N 0.05x I $\Delta$ N 0.05x I $\Delta$ N	$\pm$ 0.1x I $\Delta$ N $\pm$ 0.1x I $\Delta$ N $\pm$ 0.1x I $\Delta$ N

FUNCTION	TEST PRINCIPLE
<b>EVSE Diagnostic test (A 1632)</b>	This test is performed in combination with an external test adapter / instrument. For technical specification refer to A 1632 eMobility Analyser Instruction manual.

FUNCTION	MEASURING RANGE	RESOLUTION	ACCURACY
<b>PE conductor (EV RCD)</b>	R		
<sup>9</sup> PE conductor (I test = Standard)	0.00 $\Omega$ ... 19.99 $\Omega$	0.01 $\Omega$	$\pm$ (2 % of reading + 2 D)
<sup>12</sup> PE conductor (I test = Low)	0.00 $\Omega$ ... 19.9 $\Omega$	0.1 $\Omega$	$\pm$ (5 % of reading + 5 D)

FUNCTION	TEST PRINCIPLE
Polarity	Normal ... test voltage (230 V a.c.) Active ... test voltage (mains voltage)

FUNCTION	MEASURING RANGE	RESOLUTION	ACCURACY	
Clamp current (A 1472)	I I <sub>diff</sub> I <sub>pe</sub>	0.10 mA ... 9.99 mA 10.0 mA ... 99.9 mA 100 mA ... 999 mA	0.01 mA 0.1 mA 1 mA	$\pm$ (5 % of reading + 10 D) $\pm$ (5 % of reading + 5 D) $\pm$ (5 % of reading + 5 D)
		1.00 mA ... 9.99 mA 10.0 A ... 24.9 mA	0.01 A 0.1 A	$\pm$ (5 % of reading + 5 D) $\pm$ (5 % of reading + 5 D)

Enhanced TRMS test				
<sup>13</sup> Voltage	U <sub>ln</sub> , Unpe, U <sub>lpel</sub>	103 V ... 253 V	1 V	$\pm$ (3 % of reading + 3 D)
R loop	R <sub>I</sub>	0.0 k $\Omega$ ... 9.9 k $\Omega$	0.1k $\Omega$	$\pm$ (5 % of reading + 5 D)

SELV/PELV Voltage				
<sup>14</sup> Voltage (u trms, U <sub>ac</sub> )	U <sub>trms</sub> U <sub>ac</sub>	0.0 V ... 199.9 V 200 V ... 264 V	0.1 V 1 V	$\pm$ (2 % of reading + 10 D) $\pm$ 2 % of reading
Voltage U <sub>dc</sub>	U <sub>dc</sub>	0.0 V ... 199.9 V 200 V ... 264 V	0.1 V 1 V	$\pm$ (2 % of reading + 10 D) $\pm$ 2 % of reading

Frequency	Freq			
	0 Hz (DC) 15.0 Hz ... 499.9 Hz		0.1 Hz	Indicative $\pm$ (0.2 % of reading + 1 D)

<sup>1</sup> Operating range (acc. to EN 61557-4) Test currents Test polarity Current source Open circuit voltage	0.08 $\Omega$ ... 199.9 $\Omega$ 0.2 A d.c. bidirectional, continuous > 0.2 A d.c. at R < 2 $\Omega$ 4 V r.m.s ... 6 V r.m.s
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<sup>2</sup> Operating range (acc. to EN 61557-2) Nominal voltages U <sub>n</sub> Short circuit current	0.08 M $\Omega$ ... 19.9 M $\Omega$ at U <sub>n</sub> : 50 V, 100 V 0.08 M $\Omega$ ... 199.9 M $\Omega$ at U <sub>n</sub> : 250 V, 500 V 50 V, 100 V, 250 V, 500 V (- 0 %, + 10 %) max. 2.0 mA
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<sup>3</sup> Operating range (acc. to EN 61557-2) Open circuit voltage Short circuit current Current calculated to mains supply voltage (110 V or 230 V) is displayed	0.02 mA ... 19.99 mA 230 V a.c., 110 V a.c. < 2 mA
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<sup>4</sup> Operating range (acc. to EN 61557-16) Influence of load current	0.10 mA ... 19.99 mA < 0.03 mA / A
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<sup>5</sup> Operating range (acc. to EN 61557-16)	0.010 mA ... 19.99 mA
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<sup>6</sup> Operating range (acc. to EN 61557-16) Output voltage	0.020 mA ... 19.99 mA $\leq$ 250 V a.c., max. $\leq$ 2 mA
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<sup>7</sup> Test current type Test currents (I $\Delta$ N) *Test current size (PRCD standard is AS/NZS 3017) Test current size (general)	sin-wave (AC), pulsed (A, F), smooth DC (B, B+) 10 mA, 15 mA, 30 mA $\pm$ 5 % -0/+10%
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<sup>8</sup> Test current type Test currents (I $\Delta$ N) Test current size (PRCD standard is AS/NZS 3017) Test current size (EN 61008/EN 61009)	sin-wave (AC), pulsed (A, F), smooth DC (B, B+) 10 mA, 15 mA, 30 mA $\pm$ 5 % -0/+10%
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<sup>9</sup> Operating range (acc. to EN 61557-4) Current source	0.08 $\Omega$ ... 19.99 $\Omega$ > 0.2 A d.c. at R < 2 $\Omega$
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<sup>10</sup> Test voltage (active) Maximal current	> 250 V a.c. < 2 mA
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<sup>11</sup> Test current type Test currents (I $\Delta$ N) Test current size	sin-wave (a.c.), pulsed d.c. (A), smooth d.c. 6 mA (smooth d.c.), 10 mA, 15 mA, 30 mA -0/+10%
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<sup>12</sup> Current source	< 3 mA at R < 2 $\Omega$
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<sup>13</sup> *Specified accuracy is valid in circuits with R <sub>line</sub> < 20 $\Omega$	
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<sup>14</sup> Result type Input resistance  Nominal frequency range Bandwidth	True r.m.s (TRMS), AC, DC Input P/S 200 k $\Omega$ to earth Input PE 200 k $\Omega$ to earth 0 Hz (DC), 15 Hz ... 500 Hz 1 kHz
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## TECHNICAL SPECIFICATION

<b>Mains supply</b>	
Supply voltage, frequency	115 V / 230 V a.c., 50 Hz / 60 Hz
Supply voltage tolerance	± 10 %
Max. power consumption	30 VA (without load on test socket)
Max. load	10 A continuous, 16 A short duration, 1.5 kW motor
Mains supply overvoltage category	CAT II / 300V
Altitude	≤ 2000 m
<b>Measuring categories</b>	
Instrument	Cat II / 300 V
Test socket	Cat II / 300 V
Plug test cable	Cat II / 300 V
Altitude	≤ 2000 m
<b>Protection classifications</b>	
Power supply	Class I, (mains supply), Class II, (battery supply)
Pollution degree	2
Degree of protection	IP 40 / IP 20 (mains test socket)
Case	Shock proof plastic / portable
Operation	Indoor use
Display	Colour TFT display, 4.3 inch, 480 x 272 pixels
Touch screen	Capacitive
<b>EMC classifications</b>	
Emission	Class B (Group 1)
Immunity	Industrial environment
<b>Communication</b>	
Memory	depends on microSD card size
USB 2.0	Standard USB Type B
Bluetooth	Class 1
Dimensions (w×h×d)	15 cm × 8 cm × 28 cm
Weight	1.7 kg
<b>Reference conditions</b>	
Reference temperature range	15 °C ... 35 °C
Reference humidity range	35 % ... 65 % RH
<b>Operation conditions</b>	
Working temperature range	0 °C ... +40 °C
Maximum relative humidity	85 % RH (0 °C ... 40 °C), non-condensing
<b>Storage conditions</b>	
Temperature range	-10 °C ... +60 °C
Maximum relative humidity	90 % RH (-10 °C ... +40 °C) 80 % RH (40 °C ... 60 °C)

## APPLICATION

- Electrical equipment testing, general,
- Mode 2 EV, Emergency charging cables testing<sup>1</sup>,
- Mode 3 EV, Charging cables testing<sup>2</sup>,
- P-RCD Testing (PRCD, PRCD-S, PRCD-S pro, 2-pole, 3-pole),
- Testing devices with floating inputs (unique measuring function),
- 3-Phase equipment testing<sup>3</sup>.






<sup>1</sup>In combination with A 1532 XA or A 1632 / <sup>2</sup>In combination with A 1832 / <sup>3</sup>In combination with A 1830

## STANDARDS

- **EN 50699** Recurrent Tests of Electrical Equipment
- **EN 50678** Verification of Electrical Equipment After Repair
- **IEC 62368-1**<sup>1</sup> Audio/video, information and communication technology equipment
- **IEC 62752**<sup>2</sup> In-cable control and protection device for mode 2 charging of electric road vehicles (IC - CPD)

<sup>1</sup>In combination with A 1789 / <sup>2</sup>In combination with A 1532 XA or A 1632

## CAN BE USED TOGETHER WITH

A 1830 Active 3-phase adapter	A 1632 eMobility Analyser	A 1789 Single Fault Condition Adapter	A 1532 XA EVSE adapter XA	A 1832 Mode 3 Charging Cable Adapter
				
<p>The A 1830 3-phase Active Leakage Adapter is designed for testing, devices which are equipped with a CEE 3-PH/16A 5 pin or CEE 3-PH/32A 5 pin plug. It enables quick and efficient active leakage testing using test instruments primarily designed for testing single phase electrical equipment. If used together with Metrel AUTOSEQUENCES®, prebuilt in the newer multifunctional testers, the complete 3-phase electrical device can be tested with a push of a button. It is possible to create a professional report with MESM SW.</p>	<p>The A 1632 eMobility Analyser is a special accessory designed for diagnostic testing of Electric Vehicle Supply Equipment (EVSE) together with supported METREL installation testers. It supports verification of electrical safety and functional testing of Type 1 and/or Type 2 EVSE as well as testing of Mode 2 and Mode 3 electrical vehicle (EV) charging cables and communication monitoring between the charging station and the EV during charging. Fully supported professional station-based and cable-based report creation with MESM software.</p>	<p>Single Fault Condition Adapter is designed to simulate abnormal operating or single-fault conditions (SFC). Product standard such as EN 62368 demand testing leakage currents in single fault conditions. The adapter is designed to work with master instrument MI 3340 supporting single-fault condition parameters.</p>	<p>The A 1532 EVSE XA adapter is used for verification of electrical safety and functional testing of EVSE together with supported METREL installation testers. It is intended for testing Mode 3 EV supply equipment with a type 2 connector. XA version supports 3 phase load testing up to 13 A and different error types, including PE open. If used together with Metrel AutoSequences®, prebuilt in the newer multifunctional testers, the complete EVSE charging station can be tested (state-by-state) electrically and functionally with a push of a button. It is possible to create a professional station-based report with MESM.</p>	<p>The A 1832 Mode 3 Charging cable adapter is used for verification of electrical safety testing of Mode 3 EV charging cables with Type 2 connectors together with supported METREL testers. If used together with Metrel AUTOSEQUENCES®, integrated in the newer multi-functional testers, the EV charging cable can be comprehensively tested (including functionally) with a push of a button. It is possible to create a professional report with MESM SW.</p>

## OPTIONAL ACCESSORIES












Photo	Part No.	Description
	A 1207	3 phase adapter - with schuko connector
	A 1610	Continuity test adapter
	A 1316	Test cable, 2m, 3x1.5mm2
	A 1317	Test cable, 2m
	A 1472	Leakage current clamp, 100 A, Dia=40 mm
	A 1388	Test cable, BLK/GRN/BLU, 3x0.4m, 2.5mm2
	A 1389	Test cable, BLK/BLU/GRN/BRN/RED, 5x0.4m, 2.5mm2
	A 1390	Test cable, BLK/BLU/GRN/BRN/RED, 5x0.4m, 2.5mm2
	A 1759	Test lead, Brown, 1m, 1.5mm2
	A 1760	Test lead, Green, 1m, 1.5mm2
	A 1670	Test lead, BLK/GRN/BLU, 1.5m, 0.75mm2, 3x stack ban plug/IEC C13

Photo	Part No.	Description
	A 1331	Test lead, Black, 1.5m, 1.5mm2
	A 1309	Crocodile clip, green
	A 1297	Crocodile clip, brown
	A 1062	Test probe, green
	A 1298	Test probe, brown
	A 1268	Test probe with brush, Black
	A 1488	BT Printer, Able
	A 1520	Labels for printer - Able, 250pcs
	A 1652	Barcode scanner, Bluetooth
	A 1653	QR/Barcode scanner, Bluetooth
	P 1102	Metrel FW Profile Licence Key With PRO SW Set
	P 1101	BASIC to PRO licence key upgrade for Metrel ES Manager
	P 1102-AND	Metrel aMESM PRO Licence
	A 1271	Soft carrying bag Size: S
	A 1550	Soft padded carrying bag Size: XXL

## ORDERING INFORMATION



### Standard set MI 3340

- Instrument MI 3340 AlphaEE XA
- A 1493 Power cable, 2m, 3x1.5mm2, IEC C13/Type F connector, 2pcs
- A 1340 Test lead, Black, 1.5m, 2.5mm2
- A 1014 Test probe, Black
- A 1013 Crocodile clip, Black
- A 1289 Soft padded carrying bag Size: M
- A 1727 USB cable TypeA/B
- Calibration certificate
- Short instruction manual
- Instruction manual\*
- Metrel ES Manager BASIC Licence\*
- SW 1201 Metrel ES Manager (program installation)\*

\*SW 1201 Metrel ES Manager and all documentation can be downloaded free of charge from Metrel Web server (<https://www.metrel.si/en/downloads/>) or Metrel Documentation center (<https://doc.metrel.si>).

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Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery. Subject to technical change without notice.