

# Machine and switchboard tester MI 3321 MultiServicerXA

NEW



Multifunctional portable test instrument MI 3321 MultiServicerXA is intended to perform all necessary measurements for testing the electrical safety of portable electrical equipment, machines and switchgears. It is the first machine tester covering all necessary tests according to new IEC/EN 60204 ed.5 including Loop impedance, RCD and HV tests. MultiServicerXA enables measurement of discharge time, power and current consumption and resistance to excessive voltages which are the main parameters in the safety testing of hard wired appliances and large machinery. With an easy to use user interface, large graphic LCD, QWERTY keyboard, help menus with connection diagrams and extra ports for testing fixed installations the MI 3321 is the best solution for safety testing.

## MEASURING FUNCTIONS

- Continuity tests (200 mA, 10 A);
- Insulation resistance;
- Withstanding voltage tests (1000 V, 1890 V, 2200 V);
- Substitute leakage current;
- Differential leakage current;
- Touch leakage current;
- IEC cord polarity test;
- Leakage and load TRMS current measurement with current clamp;
- Portable RCD testing;
- RCD testing;
- Line and loop impedance;
- High resolution line / loop impedance (m $\Omega$ ).
- Discharge time;
- Three phase voltage / rotary field;
- Functional test.

## KEY FEATURES

- **3 in 1:** instrument performs testing of portable appliances (acc. to VDE 07010702), machines (acc. to IEC/EN 60204 Ed.5) and switchgears (acc. to IEC/EN 60439 and the new IEC/EN 61439-1) including functional and leakage tests for DUTs with nominal power up to 3.5 kW.
- **Multi-tasking:** up to 18 different measurements can be performed either as a single test or pre-programmed test sequences (PAT mode).
- **Automated:** automatic testing and PASS / FAIL evaluation of test results according to

appropriate standard.

- **Project uploading:** previous test data can be uploaded for fast retesting of the object.
- **Scan and test:** optional barcoding system and PASS / FAIL barcode label printing make retesting quick and simple.
- **RFID:** support for advanced RFID identification system.
- **User friendly:** large LCD screen, full QWERTY keyboard, help screens and warnings make the instrument an extremely easy to use.
- **Fixed appliance tests:** ports, leads and optional accessories fully support the testing of fixed machines and appliances while normal socket supports plug-in machines and appliances testing.
- **RCD testing:** instrument enables testing of parameters of RCDs and portable RCDs.
- **Clamp leakage current measurement:** quick measurement of leakage current with current clamps directly on power supply cable without disconnection of appliance from mains.
- **Discharge time test:** testing of how long it takes for the machine discharge after power is removed.
- **Withstanding voltage test:** instrument performs 2200 VAC, 1890 VAC and 1000 VAC withstanding voltage tests with settable current limit.
- **Trend functionality:** test results can be uploaded from PC to the instrument for comparison between old and new test results onsite.
- **Downloadable:** up to 6000 test results with measuring parameters can be stored in two level memory and downloaded to the PC with the help

of PC SW PATLink PRO.

- **PC SW PATLink PRO** included in the standard set enables downloading, viewing, printing of test results and exporting of data to spreadsheet applications.
- **PC SW PATLink PRO Plus** enables advanced analysis of test results, upload of structures and data upload to the instrument for on-site comparison of old and new results, upload of preprogrammed custom autosequences and creation of professional test reports.

## APPLICATION

- Factory machinery safety testing;
- Industrial safety testing;
- Portable appliances safety testing;
- Switchgear safety testing.

## STANDARDS

### Functionality

- IEC/EN 61557; IEC/EN 61439-1; IEC 60439-1; EN 60204; IEC/EN 60204-1 Ed.5; IEC/EN 60439; IEC 60755; IEC 60598-1; VDE 0404; VDE 0701-0702

### Electromagnetic compatibility

- IEC 61326

### Safety

- EN 61010-1; EN 61010-031



## TECHNICAL SPECIFICATION

FUNCTION	Measuring range	Resolution	Accuracy
<b>Withstanding test with 1890 VAC and 2200 VAC:</b>			
- Test voltage	0 V ... 3000 V	1 V	±(5 % of reading + 5 digits)
- Current	0,0 mA ... 199,9 mA	0,1 mA	±(10 % of reading + 8 digits)
<b>Withstanding test with 1000 VAC:</b>			
- Test voltage	0 V ... 1500 V	1 V	±(5 % of reading + 5 digits)
- Current	0,0 mA ... 199,9 mA	0,1 mA	±(5 % of reading + 5 digits)
	200 mA ... 500 mA	1 mA	±(5 % of reading + 5 digits)
Insulation resistance with 250 VDC; 500 VDC	0,000 MΩ ... 0,500 MΩ	0,001 MΩ	±(10 % of reading + 5 digits)
	0,501 MΩ ... 1,999 MΩ	0,001 MΩ	±(5 % of reading + 3 digits)
	2,00 MΩ ... 19,99 MΩ	0,01 MΩ	±(5 % of reading + 3 digits)
	20,0 MΩ ... 199,9 MΩ	0,1 MΩ	±(5 % of reading + 3 digits)
Insulation - S resistance with 250 VDC; 500 VDC	0,000 MΩ ... 0,500 MΩ	0,001 MΩ	±(10 % of reading + 5 digits)
	0,501 MΩ ... 1,999 MΩ	0,001 MΩ	±(5 % of reading + 3 digits)
	2,00 MΩ ... 19,99 MΩ	0,01 MΩ	±(5 % of reading + 3 digits)
PE continuity with 10 A (PAT)	0,00 Ω ... 1,99 Ω	0,01 Ω	±(5 % of reading + 3 digits)
PE continuity with 10 A (other)	0,000 Ω ... 0,999 Ω	0,001 Ω	±(5 % of reading + 6 digits)
	1,00 Ω ... 1,99 Ω	0,01 Ω	±(5 % of reading + 3 digits)
PE continuity with 200 mA	0,00 Ω ... 1,99 Ω	0,01 Ω	±(5 % of reading + 3 digits)
Discharge time	0,0 s ... 9,9 s	0,1 s	±(5 % of reading + 3 digits)
Differential leakage current	0,00 mA ... 9,99 mA	0,01 mA	±(5 % of reading + 5 digits)
Substitute leakage current	0,00 mA ... 19,99 mA	0,01 mA	±(5 % of reading + 5 digits)
Touch leakage current	0,00 mA ... 2,50 mA	0,01 mA	±(10 % of reading + 5 digits)
Functional test	0,00 kVA ... 4,00 kVA	0,01 kVA	±(5 % of reading + 3 digits)
TRMS current with clamp	0,00 mA ... 9,99 mA	0,01 mA	±(5 % of reading + 10 digits)
	10,0 mA ... 99,9 mA	0,1 mA	±(5 % of reading + 5 digits)
	100 mA ... 999 mA	1 mA	±(5 % of reading + 5 digits)
	1,00 A ... 9,99 A	0,01 A	±(5 % of reading + 5 digits)
	10,0 A ... 24,9 A	0,1 A	±(5 % of reading + 5 digits)
PRCD testing	IΔN: 10, 15, 30 mA		
- Trip-out time	0 ms ... 300 ms (1/2xIΔN)	1 ms	±3 ms
	0 ms ... 300 ms (IΔN)	1 ms	±3 ms
	0 ms ... 40 ms (5xIΔN)	1 ms	±3 ms
RCD testing	IΔN: 10, 30, 100, 300, 500, 1000 mA		
- Contact voltage	0,0 V ... 19,9 V	0,1 V	(-0%/+15%) of reading ±10 dig.
	20,0 V ... 99,9 V	0,1 V	(-0%/+15%) of reading
- Trip-out time	0,0 ms ... 40,0 ms	0,1 ms	±1 ms
	0,0 ms ... 300,0 ms	0,1 ms	±3 ms
- Trip-out current	0,2xIΔN ... 1,1xIΔN (tip AC)	0,05xIΔN	±0,1xIΔN
	0,2xIΔN ... 1,5xIΔN (tip A, IΔN ≥30 mA)	0,05xIΔN	±0,1xIΔN
	0,2xIΔN ... 2,2xIΔN (tip A, IΔN <30 mA)	0,05xIΔN	±0,1xIΔN
Fault loop impedance / Line impedance	0,00 Ω ... 9,99 Ω	0,01 Ω	±(5 % of reading + 5 digits)
	10,0 Ω ... 99,9 Ω	0,1 Ω	±(5 % of reading + 5 digits)
	100 Ω ... 1999 Ω	1 Ω	±10 % of reading
Voltage	0 V ... 550 V	1 V	±(2 % of reading + 2 digits)
Frequency	14,0 Hz ... 499,9 Hz	0,1 Hz	±(0,2 % of reading + 1 digit)
Power supply	115 V / 230 V, 50 Hz / 60 Hz		
Overvoltage category	CAT II / 300 V		
Protection class	I		
COM port	RS232 y USB		
Dimensions	345 x 160 x 335 mm		
Weight	8,4 kg		

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## ORDERING INFORMATION



### Standard set MI 3321

- Instrument MultiServicerXA
- HV test lead with test probe
- HV test lead with crocodile
- Plug test cable
- 3-wire test lead
- Test lead, black, 1,5 m
- Test lead, green, 1,5 m
- Test lead, red, 4 m
- Test probe, 4 pcs (black, red, green, blue)
- Crocodile clip, black, 3 pcs
- Protective bag for accessories
- PC SW PATLink PRO with RS232 and USB cable
- Instruction manual
- Calibration certificate

## OPTIONAL ACCESSORIES

Photo	Order No.	Acc. description
	A 1143	Euro Z 290 A
	A 1322/ A 1422	Active 3-phase adapter
	A 1207	Three phase adapter
	A 1110	Three phase adapter
	A 1111	Three phase adapter with switch
	A 1283	Shielded leakage current clamp
	S 2062	BT label printer set
	A 1450	Spare label roll for S 2062
	A 1105	Barcode scanner
	A 1107	RFID reader / writer
	A 1108	RFID tags, self-stick and key tag, 25 pcs
	A 1421	External buzzer
	A 1447	PRCD Extension adapter (from HW4)