

Technical Data NT 700-2 and NT 700-3

NT 700-2 test point interfaces at the front side
 NT 700-3 test table variant with test point interfaces at the rear side

Test points		
Type of test point cards	RM10 (LT) (32 test points)	RM11/RM15 (64 test points)
Max. no. of test points	512	1024
Max. no. of test point cards	16	
Test point interface	2 x 16-way, DIN 41612	2 x 32-way, DIN 41612
Other		
Power supply	230 VAC / 50 Hz or 110 VAC / 60 Hz	
Dimensions (W x H x D)	555 x 650 x 600 mm	
Weight	approx. 62 kg	
Environmental conditions	Temperature range: operation: +10 °C – +40 °C storage: +10 °C – +60 °C Relative humidity: 30 % – 70 %, non-condensing	
Operating	Control software NT Control, executable on a PC with Microsoft Windows® 7 Pro up to Windows® 10 Pro (country variant German or English)	
	Clearly designed operator interface, customizable	
	Transparent test procedures, extensive graphical fault description	
	Detailed printouts of the test results on all printers supported by Windows®	
	Report, label and lot printing	
	Remote maintenance	
Programming	Autoprogramming of golden patterns	
	Test program editors	
	Test point naming in several formats, output format selectable	
	Individual test procedure programming with Sax Basic Engine	
	Correction value determination for R, C, L and Z (option)	
	Function test (option)	
	AC/DC stimulus sources (option)	
	Voltage measurement / external voltage detection (option)	
	Test program selection via I/O card (option)	
	UNICAD-converter for CAD- and Excel link-data (option)	
	Downward compatible to existing test programs in the ATX-format	
	Temperature and humidity logging, 0 - 100 % rel. humidity ±2 %, -40 – 80°C ±0.3 K (option)	
Diagnosis	Self-diagnosis for the measurement electronics and the test point cards	
Interfaces	Network	
	Serial interface RS232 / USB 2.0	
	3 x I/O, digital, 24 V, D-Sub 15-way	
	Interface for warning lamp red-green, foot switch, test result lamp	
	Pin number probe for test point identification	
	Safety loop for the protection of the work place	
	I/O interface with 8, 16 or 24 opto-decoupled inputs and potential-free outputs (option)	
	RJ12 interface for the connection of a temperature and humidity sensor	
Scope of delivery	External LCR measuring bridge and digital multimeter (option)	
	NT 700, main cable, pin number probe, USB flash drive with NT Control and detailed documentation	

Measurement electronics MT20

Low voltage test	
Test voltage	1 – 25 V programmable in steps of 1 V ($\pm 3\%$, min. 0.2 V)
Test current	max. 25 mA
Threshold continuity test	1 Ohm – 1 kOhm ($\pm 5\%$, min. 1 Ohm)
Threshold short-circuit test	20 kOhm – 1 MOhm ($\pm 5\%$) Option: up to 5 MOhm ($\pm 20\%$ at test voltages ≥ 20 V)
Component test	
Resistors	1 Ohm – 1 MOhm ($\pm 5\%$, min. 1 Ohm) Option: up to 5 MOhm ($\pm 20\%$ at test voltages ≥ 20 V)
Capacitors	10 nF – 20 mF ($\pm 10\%$) Option: from 100 pF ($\pm 10\%$, ± 20 pF)
Diodes	Forward voltage: < 1.0 V Reverse voltage: max. 25 V
Zener diodes	Forward voltage: < 3.0 V Zener voltage: max. 20 V ($\pm 10\%$)
LEDs	Forward-Voltage: < 4.0 V Reverse voltage: max. 25 V
Suppressor diode	Break-down voltage: 3 V – 23 V ($\pm 10\%$)

Measurement electronics C19052

Dielectric strength test AC		
Type of test point cards	RM10 (LT)	RM11/RM15
Test voltage	50 – 2650 (LT: 2000) VAC in steps of 10 V, 50 or 60 Hz / max. 30 mA (short circuit)	50 – 1500 VAC in steps of 10 V, 50 or 60 Hz / max. 30 mA (short circuit)
Testing times	Rise time 0 – 65000 ms in steps of 100 ms Dwell time 0.5 – 65000 ms in steps of 100 ms Fall time 0 – 65000 ms in steps of 100 ms	
Programmable detection mode	Limiting value overrun I _{max} programmable 0.5 mA - 30 mA AC in steps of 0.1 mA	
	Limiting value overrun I _{max} REAL programmable 0 mA - 30 mA AC in steps of 0.1 mA	
	Current changing limiting value detector: di/dt programmable 0 mA, 3 mA - 15 mA AC min. pulse width approx. 10 µs in steps of 0.1 mA	
	Limiting value underrun I _{min} programmable 0 mA - 30 mA AC in steps of 0.01 mA	
Dielectric strength test DC		
Type of test point cards	RM10 (LT)	RM11/RM15
Test voltage	50 – 3750 (LT: 2830) VDC in steps of 10 V / max. 12 mA (short circuit)	50 – 2150 VDC in steps of 10 V / max. 12 mA (short circuit)
Testing times	Rise time 0 – 65000 ms in steps of 100 ms Dwell time 0.5 – 65000 ms in steps of 100 ms Fall time 0 – 65000 ms in steps of 100 ms	
Programmable detection mode	Limiting value overrun I _{max} programmable 0.1 mA - 10 mA DC in steps of 0.1 mA	
	Current changing limiting value detector: di/dt programmable 0 mA, 3 mA - 10 mA DC min. pulse width approx. 10 µs in steps of 0.1 mA	
	Limiting value underrun I _{min} programmable 0 mA - 10 mA DC in steps of 0.01 mA	

Note: not safety current limited

Measurement electronics MT1500DC

High voltage test											
Test voltage	40 – 1500 VDC ($\pm 2\%$); in steps of 1 V										
Test current	max. 2 mA (safety current limited according to EN 61010)										
Testing times	Rise time 0 – 60000 ms; in steps of 10 ms Dwell time 0 – 60000 ms; in steps of 10 ms										
Insulation test	500 kOhm – 2 GOhm Option: up to 10 GOhm (not valid for Distributed Test Systems or unearthed operation) in steps of 500 kOhm										
Dielectric strength test	Fast recognitions of voltage breakdowns at test voltages ≥ 200 V (arc detections)										
Accuracy in dependence of the voltage:											
Voltage	500 kOhm – 500 MOhm	> 500 MOhm – 2 GOhm	> 2 GOhm – 10 GOhm								
1500 V	2 %	5 %	15 %								
≥ 1000 V	2 %	5 %	$\geq 15\%$								
≥ 500 V	2 %	$\geq 15\%$	$\geq 15\%$								
	500 kOhm – 100 MOhm	> 100 MOhm – 2 GOhm	> 2 GOhm – 10 GOhm								
≥ 100 V	2 %	$\geq 15\%$	$\geq 15\%$								
High current test											
Test current	50 mA – 2 A (1 A with RM16); in steps of 10 mA										
Test voltage	max. 22 VDC										
Test times	Dwell time 0 – 60000 ms; in steps of 100 ms										
Threshold continuity test	500 mOhm – 10 Ohm, $\pm 2\%$, min. 200 mOhm 10 Ohm – 1 kOhm, $\pm 5\%$ (dwell time ≥ 100 ms) in steps of 500 mOhm										
Four-wire measurement 1 mOhm (option)	1 mOhm – 1000 Ohm; in steps of 1 mOhm $\pm 2\%$, min. 1 mOhm at test current ≥ 1 A $\pm 5\%$, min. 5 mOhm at test current < 1 A, min. 50 mOhm <table border="1" data-bbox="579 1182 1445 1361"> <thead> <tr> <th>Resolution</th> <th>Measuring range</th> </tr> </thead> <tbody> <tr> <td>13 μOhm</td> <td>at 2 A test current: 100 μOhm – 50 mOhm</td> </tr> <tr> <td>245 μOhm</td> <td>at 2 A test current: 50 mOhm – 1 Ohm</td> </tr> <tr> <td>4,9 mOhm</td> <td>at 2 A test current: 1 Ohm – 11 Ohm</td> </tr> <tr> <td>0.045 % of measured value</td> <td>if test current of 2 A is not reached due to voltage limitation: 11 Ohm – 1000 Ohm</td> </tr> </tbody> </table> Note: The measuring ranges change depending on the specified test current.	Resolution	Measuring range	13 μ Ohm	at 2 A test current: 100 μ Ohm – 50 mOhm	245 μ Ohm	at 2 A test current: 50 mOhm – 1 Ohm	4,9 mOhm	at 2 A test current: 1 Ohm – 11 Ohm	0.045 % of measured value	if test current of 2 A is not reached due to voltage limitation: 11 Ohm – 1000 Ohm
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Four-wire measurement 100 μ Ohm (option)	100 μ Ohm – 1000 Ohm; minimum step size 100 μ Ohm Measuring range 100 μ Ohm – 1 mOhm: Measurement accuracy absolute $\pm 20\%$ at test current 2 A Repeating accuracy ± 10 μ Ohm Measuring time min. 4.8 s Measuring range 1 mOhm – 1000 Ohm: $\pm 2\%$, min. 1 mOhm at test current ≥ 1 A $\pm 5\%$, min. 5 mOhm at test current < 1 A, min. 50 mOhm <table border="1" data-bbox="579 1727 1445 1906"> <thead> <tr> <th>Resolution</th> <th>Measuring range</th> </tr> </thead> <tbody> <tr> <td>1 μOhm</td> <td>at 2 A test current: 100 μOhm – 50 mOhm</td> </tr> <tr> <td>16 μOhm</td> <td>at 2 A test current: 50 mOhm – 1 Ohm</td> </tr> <tr> <td>305 μOhm</td> <td>at 2 A test current: 1 Ohm – 11 Ohm</td> </tr> <tr> <td>0.0028 % of measured value</td> <td>if test current of 2 A is not reached due to voltage limitation: 11 Ohm – 1000 Ohm</td> </tr> </tbody> </table> Note: The measuring ranges change depending on the specified test current.	Resolution	Measuring range	1 μ Ohm	at 2 A test current: 100 μ Ohm – 50 mOhm	16 μ Ohm	at 2 A test current: 50 mOhm – 1 Ohm	305 μ Ohm	at 2 A test current: 1 Ohm – 11 Ohm	0.0028 % of measured value	if test current of 2 A is not reached due to voltage limitation: 11 Ohm – 1000 Ohm
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0.0028 % of measured value	if test current of 2 A is not reached due to voltage limitation: 11 Ohm – 1000 Ohm										
Not suitable for unearthed operation.											
Short time interruptions AMC (option)	Interruptions ≥ 1 μ s										

Component test	
Varistors	
Varistor voltage	40 – 1300 VDC
Test current	1 mA
Surge arrestors	
Breakdown voltage	100 – 1300 VDC
Ramp	100 V/s or 1000 V/s

Conditions for all tolerance statements: operating mode „Precise Mode“, earthbound operation, environmental conditions 15 – 35 °C / 20 – 60 % rel. humidity (non-condensing)

The statements for the component test refer to the test of single components, which are connected separately with test points.

Technical data and tolerances are subject to change depending on a specific ambient of the test object or application.