Technical Data NT 644

Test points	
Type of test point cards	RM11 / RM15
Max. number of test point cards	16
Max. number of test points	1024
Test point interface	2 x female connector DIN 41612, 32-way
Other	
Power supply	100 – 240 VAC (50 - 60 Hz)
Dimensions (W x H x D)	450 mm x 410 mm x 520 mm
Weight	approx. 21 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 interfaces 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
	External LCR measuring bridge and digital multimeter (option)
Scope of delivery	NT 644, main cable, pin number probe, USB flash drive with NT Control and documentation in PDF format

Measurement electronics MT20

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

Measurement electronics MT2000

Dielectric strength test		
Voltage type	**AC, 50 Hz / 60 Hz**	
Test voltage	100 - 1500 VAC (±5 %, min. 10 V); in steps of 5 V	
Short circuit current	MT2000-3mA	max. 2.1 mA_{eff}, 3 mA_{p} (±5 %); non-programmable (safety current limited according to EN 50191)
	MT2000-6mA	max. 4.2 mA_{eff}, 6 mA_{p} (±5 %); non-programmable
Test voltage	Rise time:	80 - 65000 ms; in steps of 20 ms
	Dwell time:	40 - 65000 ms; in steps of 20 ms
	Fall time:	0 - 65000 ms; in steps of 20 ms
Breakdown detection	• Limit exceedance $I_{maxreal}$ 0.5 - 4.2 mA_{eff}; in steps of 0.1 mA $I_{maxreal}$ has to be lower than I_{max} • Limit exceedance I_{max} 0.5 - 4.2 mA_{eff}; in steps of 0.1 mA • Breakdown detector du/dt; non-programmable; fast and sensible breakdown detector. Prevents the unit under test from damage by the arc.	
Voltage type:	**DC**	
Test voltage	40 - 2150 VDC (±5 %, min. 5 V); in steps of 5 V	
Short circuit current	MT2000-3mA	max. 3 mA (±5 %); non-programmable (safety current limited according to EN 50191)
	MT2000-6mA	max. 6 mA (±5 %); non-programmable
Test voltage	Rise time:	20 - 65000 ms; in steps of 20 ms
	Dwell time:	20 - 65000 ms; in steps of 20 ms
	Fall time:	0 - 65000 ms; in steps of 20 ms
Breakdown detection	• Limit exceedance Imax of 0.5 - 6 mA; in steps of 0,1 mA • Breakdown detector du/dt; non-programmable; fast and sensible breakdown detector. Prevents the unit under test from damage by the arc.	
Insulation test		
Voltage type:	**DC**	
Test voltage:	40 - 2150 VDC (±5 %, min. 5 V); in steps of 5 V	

Short circuit current	MT2000-3mA	max. 3 mA (±5 %); non-programmable (safety current limited according to EN 50191)
	MT2000-6mA	max. 6 mA (±5 %); non-programmable
Test voltage	Rise time:	20 - 65000 ms; in steps of 20 ms
	Dwell time:	20 - 65000 ms; in steps of 20 ms
Threshold for insulation test	500 kOhm - 100 MOhm (±5 %, voltage ≥ 100 V) 100 MOhm - 2 GOhm (±5 %, voltage ≥ 500 V) optional: up to 10 GOhm (±15 %, voltage ≥ 1000 V) *1)* in steps of 500 kOhm Voltage breakdown detection at test voltages ≥ 200 V *1)* not valid for Distributed Test Systems	
Breakdown detection	• Breakdown detector $^{du}/_{dt}$; non-programmable; fast and sensible breakdown detector. Prevents the unit under test from damage by the arc.	
Component test		
Varistors		
Varistor voltage	40 - 2000 VDC	
Test current	1 mA	
Surge arrestors		
Breakdown voltage	40 - 2000 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.