Technical Data NT 628

Base equipment with measurement electronics MT20

Test points				
Type test point cards	RM60	RM80	RM100 / RM16	RM120
Max. number of test points base unit	512		256	
Test point interface	Female connector DIN 41612, 64-way		Female connector DIN 41612, 32-way	
Low voltage test				
Test voltage	1 – 25 V; 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 %) Option: from 100 pF (±10 %, min. ±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 diodes	Break-down voltage: 3 V – 23 V (±10 %)			
Other				
Power supply	100 – 240 VAC (50 - 60 Hz)			
Dimensions (W x H x D)	450 mm x 150 mm x 395 mm			
Weight	approx. 8 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 (not part of the delivery) with operating system 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			
Features	Autoprogramming of golden patterns			
	Test program editors			
	Test point naming in several formats, output format selectable			
	Test system remote control with PROFINET			
	Test result visualization similar to AST			
	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 628, main cable, pin number probe, USB flash drive with NT Control and documentation in PDF format

Measurement electronics option MT40-40 / MT40-250

Low voltage test		
Test voltage	MT40-40	0.2 – 40 V (±1 %, ±10 mV); in steps of 0,1 V
	MT40-250	0.25 – 250 V (±2 %, ±125 mV); in steps of 0,25 V
Test current	MT40-40	0.1 – 100 mA (±1 %, ± 0.025 mA); in steps of 0,025 mA
	MT40-250	0.1 – 10 mA (±1 %, ± 0.025 mA); in steps of 0.025 mA
Time factor (waiting time)	0 – 650 ms; in steps of 10 µs	
Threshold for continuity test	1 Ohm – 1 kOhm (±2 %, min. 1 Ohm); in steps of 1 Ohm	
Threshold for short circuit test	20 kOhm – 10 MOhm (±2 %); in steps of 10 kOhm Option: up to 100 MOhm (±10 %); in steps of 10 kOhm	
Component test		
Resistors	1 – 10 MOhm (±2 %, min. 1 Ohm) Option: up to 100 MOhm (±10 %)	
Capacitors	• at testers with relay test point cards: 10 nF – 20 mF (±5 %) Option: from 10 pF (±10 %, min. 5 pF) max. test voltage at ≥ 500 µF = 2,2 V; at 10 µF – 500 µF = 4,2 V; at 500 nF – 10 µF = 5 V; at < 500 nF = 40 V (Limit Cap.Volt = OFF)	
Diodes:	Forward voltage: ≤ 1.0 V MT40-40: reverse voltage max. 40 V MT40-250: reverse voltage max. 250 V	
Zener diodes	Forward voltage: ≤ 1.0 V MT40-40: Zener voltage > 2.4 V; max. 35 V (±10 %) MT40-250: Zener voltage > 2.4 V; max. 200 V (±10 %)	
LEDs	Forward voltage: ≤ 4.0 V MT40-40: reverse voltage max. 40 V MT40-250: reverse voltage max. 250 V	
Suppressor diodes	MT40-40: breakdown voltage 3 V – 35 V (±10 %) MT40-250: breakdown voltage 3 V – 200 V (±10 %)	

Measurement electronics option MT1500DC

High voltage test

Test voltage	RM60 / RM100 / RM16	40 – 1000 VDC (±2 %); in steps of 1 V
	RM80 / RM120	40 – 1500 VDC (±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 %	≥ 15 %
≥ 500 V	2 %	≥ 15 %	≥ 15 %
	500 kOhm – 100 MOhm	**> 100 MOhm – 2 GOhm**	**> 2 GOhm – 10 GOhm**
≥ 100 V	2 %	≥ 15 %	≥ 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, ±2 %, min. 200 mOhm 10 Ohm – 1 kOhm, ±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
±2 %, min. 1 mOhm at test current ≥ 1 A
±5 %, min. 5 mOhm at test current < 1 A, min. 50 mOhm

Resolution	Measuring range
13 µOhm	at 2 A test current: 100 µOhm – 50 mOhm
245 µOhm	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

Note: The measuring ranges change depending on the specified test current.

Four-wire measurement 100 µOhm (option)

100 µOhm – 1000 Ohm; minimum step size 100 µOhm

Measuring range 100 µOhm – 1 mOhm:
Measurement accuracy absolute ±20 % at test current 2 A
Repeating accuracy ±10 µOhm
Measuring time min. 4.8 s

Measuring range 1 mOhm – 1000 Ohm:
±2 %, min. 1 mOhm at test current ≥ 1 A
±5 %, min. 5 mOhm at test current < 1 A, min. 50 mOhm

Resolution	Measuring range
1 µOhm	at 2 A test current: 100 µOhm – 50 mOhm
16 µOhm	at 2 A test current: 50 mOhm – 1 Ohm
305 µOhm	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

Note: The measuring ranges change depending on the specified test current.

Not suitable for unearthed operation.

Short time interruptions AMC (option)	Interruptions ≥ 1 µs	
Component test		
Varistors		
Varistor voltage	RM60 / RM100 / RM16	40 – 900 VDC
	RM80 / RM120	40 – 1300 VDC
Test current	1 mA	
Surge arrestors		
Breakdown voltage	RM60 / RM100 / RM16	100 – 900 VDC
	RM80 / RM120	100 – 1300 VDC
Ramp	100 V/s or 1000 V/s	

Measurement electronics option MT_EXT

Voltage measurement	
Voltage AC	0.2 – 500 V (±3 %, min. 100 mV), max. 400 Hz
Voltage DC	0.2 – 700 V (±3 %, min. 100 mV)

Measurement electronics option MT_LCR

Component test	
Test voltage	2 V (±0.6 V)
Measurement frequencies	100 Hz, 1 kHz, 10 kHz
Inductances	200 µH – 1 H (±5 %, min. 50 µH)
Capacitors	100 pF – 10 µF (±5 %, min. 50 pF)
Resistors	1 Ohm – 50 kOhm (±5 %, min. 100 mOhm)

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.