Technical Data KT 644-3

Test points		
Type of test point cards	RM10LT (SP)	RM15 (MPX)
Max. number of test point cards	16	
Max. number of test points	512	1024
Test point interface	2 x female connector DIN 41612, 16-way	2 x female connector DIN 41612, 32-way
General		
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: 20 % – 70 %, non-condensing	
Operating	Operating unit consisting of a high-contrast LC-display with 4 x 20 characters and 11 keys	
	Operating languages: German, English, French, Italian, Spanish, Danish, Czech, Polish, Hungarian and Japanese (further languages on request)	
Features	Self-learning of known good samples	
	Programming with test program editor NT Control LT (PC software)	
	Elaborate possibilities for the output and formatting of test results for printer and/or file	
	Expanded label and report printing, also to file	
	Test procedure control for the customization to special test tasks	
	Division of the test procedure into single test steps (segments) e.g. for the test of switch positions or for segment specific parameters	
	Visual check of LEDs	
Diagnosis	Self-diagnosis for the measurement electronics and the test point cards	
Interfaces	Network	
	Serial interfaces RS232 3 x USB 2.0 (1 x front, 2 x rear)	
	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	
	RJ12 interface for the connection of a temperature and humidity sensor	
Specialties	Microsoft® Network Client and server software pre-installed and configured	
Data storage	Flash Memory 2 GB internal and USB stick ≥ 2 GB	
Scope of delivery	KT 644-3, main cable, pin number probe, USB flash drive with NT Control LT and detailed documentation	

Options (Excerpt)	
	Test program selection via I/O card
	Checking and testing with barcode
	Correction value determination for R, C, L and Z
	Digital I/O interfaces 24 V, 8, 16 or 24 I/Os, D-Sub 37-way
	Test system remote control via digital I/Os, serial interface or all common field-bus systems
	Temperature and humidity protocol, 0 - 100 % rF ±2 %, -40 - 80 °C ±0.3 K
	Adapter cables as well as I/O connection cables and I/O interface boards
	Interface for adaptronic test tables
	Handles / installation set 19"
	UNICAD converter for CAD- and Excel link data

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 %) Option: 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.