

Technical Data KT 638-3

Test points				
Type of test point cards	RM60	RM80	RM100 / RM16	RM120
Max. number of test point cards	8			
Max. number of test points	512		256	
Test point interface	Female connector DIN 41612, 64-way		Female connector DIN 41612, 32-way	
General				
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: 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 interface (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 flash drive ≥ 2 GB			
Scope of delivery	KT 638, main cable, pin number probe, USB flash drive with NT Control LT and documentation in PDF format			

Options	
	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
	LCR measuring bridge
	Adapter cables as well as I/O connection cables and I/O interface boards
	Interface for adaptronic test tables
	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 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 $\geq 1\text{ }\mu\text{s}$	
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	

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.