

Cable – tester

KabTEC192-M



Instruction manual

 **MEDiKabel**.de

Introduction

The KabTEC192-M is a cable – tester used for 2 x 192 test points and it enables alternative possibilities of recording. The basic device has the following functionality (without a pc – connection):

- > 384 test points for testing read in and saved sample cables
- > non – volatile reference cable storage
- > cyclic endurance test or triggerable single – test function
- > handling of the menu and error analysis by a 2 x 16digit LCD as well as by acoustic signaling
- > single – strand selection by means of a test point probe
- > cognition of interruptions, short – circuits and polarised diodes
- > no efforts in programming because of self – didactic learning
- > possibilities of recording by stamp or printer (accessories)

The basic unit needs a 9V DC voltage, provided by the supplied PSU. For the PSU a 230 V – line voltage connection is needed.

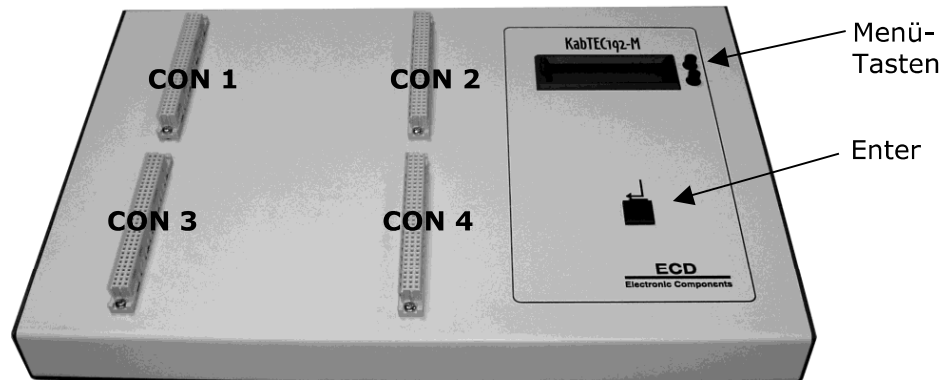
Never use the device with a different voltage than the one specified! Always meet the ESD (= electrostatic discharge) protection! For problems caused by wrong voltage or disregard of ESD protection no del credere liability can be assumed!

Always meet the ESD protection!

How to switch on the unit

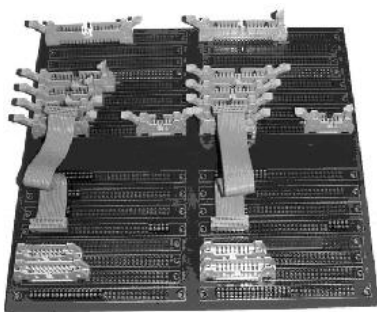
Always plug the low-volt connector of the power supply unit into the backside of the basic unit first, please! To switch on and off please connect resp. disconnect the PSU from the 230V AC voltage mains.

Structure of the unit

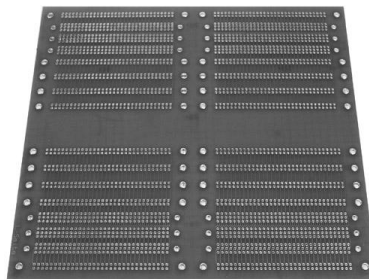


The wire bonding is effectuated by the four 96pin – female connector strips (see picture above: from CON1 to CON4), for which different adapter boards are available. These are offered as blank adapters, assembled with four 96pin pin tubs. They can, however, also be manufactured according to the respective application or according to our clients' demands. The plug encoding prevents the adapters from being attached in a wrong way.

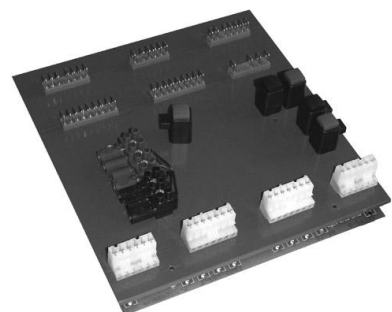
Adapter samples:



loaded adapter board



blank board
(basic adapter III)



custom – made adapter

KabTEC192-M is easy to run by using two menu keys and one confirmation (=enter) key. Program selection and input of numbers are done by the two menu keys right of the display. To confirm e.g. the start of a chosen program please press the enter key.

After the voltage supply has been switched on, the basic unit KabTEC192-M performs a self-test. If the unit detects any malfunctions, an error code will be displayed on the LCD and any further use of the device is impossible. So in this case an incorrect check is debarred.

If the device is ready for operation, the following display appears:



The menu keys allow the selection of the programs specified in the following:

The selected program is started by pressing the enter key (symbol: ↵).

Measurement 384

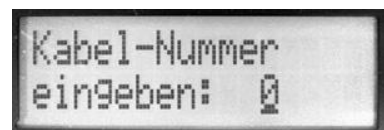


Saving the appropriate sample cable is a supposition for the action "Measurement 384". For that, please read the chapter "saving cables".

The point – to – point –measurement of all of the 384 test points is done continuously. Reference cables that have been read in and saved in the EEPROM, are compared with the plugged in test cable and evaluated according to it, i.e. an immaculate test cable is immediately being judged as good and respectively displayed. KabTec192-M is used for examining cables, mains and diodes on interruptions and short-circuits. If there's no connection available, the LCD displays "No cable plugged in". If an error occurs, the deviation from the saved reference cable is stated on the display. The display is constantly being updated and reflects the recent test status. If the signaller is activated (see settings > signaller> sound intensity), "no error" is signalled by three short beeps, so that it is not necessary to have a look at the display. Cables, mains, and diodes are tested for discontinuities and short-circuits. Diodes are also tested for polarity reversals.

After having started the program "Measurement 384", the user is asked to choose the required reference cable, provided that an appropriate cable has been saved before. The chapter "How to read in cables" gives detailed information on that matter.

The following display occurs:



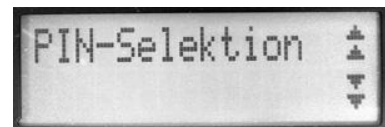
The spot underlined by the cursor can be changed by means of the menu keys. The selected number is confirmed by pressing "enter". After having entered the four digits, the cyclic test process starts. This process is symbolised by the rotating test indicator in the top right corner of the display. The evaluation is done according to the current test state. It is unnecessary to press the key again. The test cycle can always be discontinued by pressing the lower menu key, shown as "end". Herefore it is necessary to press the key for some seconds.

Attention: In the case of test cables with a very high number of 2-point connections it may take some seconds, until the KabTEC192-M has run through a test series and until the display is being updated!

Display	evaluation
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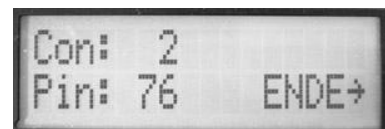
<i>no cable connected</i>	- no cable plugged on the tester - all connections of the cable are disconnected
<i>end</i> <i>x-xx -> x-xx</i>	There is a connection between the two points specified.
<i>interruption</i> <i>x-xx -> x-xx</i>	There is a disconnection between the two points specified.
<i>no error!</i>	The tested cable conforms to the reference cable.

PIN selection



The program "PIN selection" enables the user to use KabTEC192-M as a help for wiring. A test point probe - included in the scope of delivery - is plugged in the socket on the back-side of the device. After having started the program each of the 384 test points that is in contact with the test point probe is displayed.

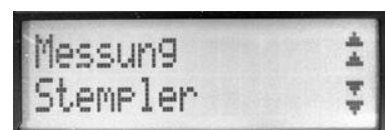
For every contacted measuring point the corresponding plug is displayed with "CON" and the appendant port is displayed with "PIN". So the first point of the upper left 96pin female connector strip is specified with CON: 1 and PIN: 1, the very last point of the lower right female connector strip is specified with CON: 4, PIN: 96.



If there are several points connected to the probe, e.g. in case of mass connections, it can be displayed one after another by pressing the enter key.

Attention: Do not supply the test point probe with any external voltage! Otherwise the KabTEC192-M will be destroyed.

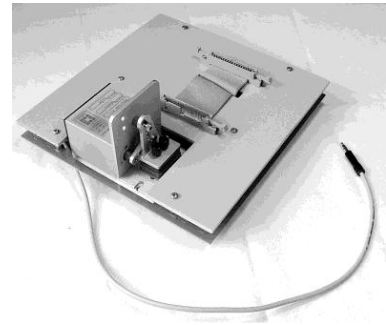
Measuring stamp



This menu allows the use of the stamp shown in the following picture. In this case the test process is started manually after the test cable has been plugged in. In case of a positive benchmark the signal for triggering the stamp is generated.

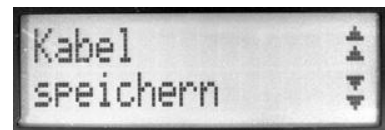
As described in the chapter "Measurement 384" you have to select a saved reference cable first. Having tested all of the 384 test points by a point – to – point test, the program stops. By pressing the "Enter" – key a new pass can be started. If the plugged in test cable is immaculate, the stamp will be triggered. In case of an error the divergence from the reference cable will be displayed and the triggering of the stamp will be blocked.

The stamp is available in a single version or on a custom-made adapter.



adapter with stamp

Saving a cable



After having confirmed the personal identification number (PIN) the user can now save the reference cable. Data of the saved cables are provided in the programs "Measurement 384" and "Measuring stamp". Cables and wires are stored in the separate EEPROM that saves cable – data even after the KabTEC192-M has been switched off.

In order to save the reference cables it is necessary to enter a four-digit personal identification number. This number can be changed in the menu "Settings" by using the menu keys, confirmation is done by pressing enter.



Up to 1000 reference cables can be saved. Only cables with a maximum of 20.000 two – point – connections can be saved. It is, however, not possible to save more than appr. 85.000 two – point – connections in the EEPROM. If this amount is exceeded, the message "Memory full" is displayed when reading in a cable. The read - in - process is cancelled.

The allocation of numbers is done automatically, beginning with 1.

After the insertion of the correct PIN one has to choose between cable lengths of above or below 2m. This selection influences the time needed to derivate capacitive charges. The selection of ">2m" also increases the testing time. The selection made is saved with the other data of the respective cable and is used for testing. The length given is a reference value only. After the selection has been made, a new cable number appears on the display.

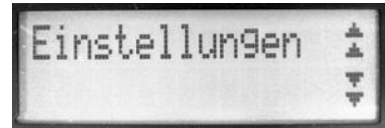
By confirming with "OK" the user is asked to "*plug in sample cable xxxx*". Please note your designation of the cable and the appendant cable number. A suggestion for a list "storage summary" is included in this instruction manual. Should you need any more lists, you can download them at www.ecd-online.de.

After acknowledgement by pressing the "enter" – key, the plugged on cable is read in and saved. If saving was successful, the cable number and the number of the detected

two – point – connections will be displayed. Please confirm by pressing "OK" (lower menu key). The saved reference is now available for testing.

How to delete a single or all reference cables is described in chapter "settings".

Settings



The program "Settings" contains the following sub-programs:

- deleting saved reference cables
- setting the sound intensity of acoustic signals, e.g. indication of defective cables, key confirmation on/off
- changing the personal identification number

After having selected the program "settings" the user has to enter the personal identification number before he can choose – with the help of the upper menu key - between the particular programs. The relevant program can be selected by pressing "enter". Leaving the menu "settings" is possible by using the lower menu key, "end →".

Memory – reset:

In this menu saved reference cables can be deleted. The memory - reset has to be confirmed with "Yes", using the upper menu key. To cancel the reset process press "No". Please note that after this action all saved cables are deleted and allocation of numbers starts again with 0001.

The reset of the complete memory takes about 45 seconds. While resetting, a message appears on the display: "memory being deleted!"

Deletion of a cable

This option allows the deletion of a single saved reference cable. First enter the number to be deleted. After confirmation of the number with "ENTER↵", a security request appears. Here you can check the cable number entered and in case of a wrong number leave the program "*deletion of cable*". If the right number has been entered, the deleting process is started with "YES" and "*cable is being deleted*" appears on the display. The process takes about 45 sec. If the entered cable number does not exist, the message "*cable non-existent*" appears on the display.

Please make sure that you delete the cable in your list as well. The numeration of the other reference cables as well as the consecutive saving of new references happens independently of the deletion of the single cable.

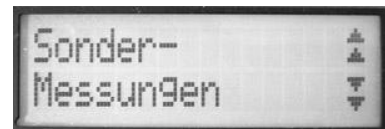
Signaler's sound intensity

There are three different sound levels: "loud", "low" and "off". Selection and following sample output is done by using the upper menu key. For saving the selected setting please press the lower menu key "Save →".

Changing the personal identification number

To change the adjusted settings - basic state "0000" - please enter your old PIN. Afterwards it is possible to enter a new number. The new four-digit PIN will be active after confirmation. Please note down your PIN and keep it safe! ***If you forget your PIN you won't have any access to PIN-restricted areas!*** In this case please contact us.

optional



On request there are several modes of measurement available.. For customers who already use the predecessor – model "KabTEC-96D" and appendant adapter boards, we offer a "comparison measurement 192". In this mode, KabTEC192-M works like the KabTEC96-D. All existing adapter boards can be used as usual.

Special measurements are programs that are optionally available. They include milliohm - resistor measurements, adjustable connection – threshold resistor values or customised programmed measurements.

The resistor threshold between connection and interruption has a value of appr. 5 kΩ. If this value is too high, it is possible to lower the threshold value for cable tests. In this case the cycle – time for an entire pass, depending on the number of two – point – connections is increased.

If you have a special measurement problem, we will check your request on realisation. If possible, we will accommodate the programming according to your needs.

The prepared serial RS232-interface allows you to connect a personal computer to your KabTEC192-M. You will be informed as soon as the necessary software is available. The PC features the following upgrades:

- defining of cables on the basis of draft documents and transmission into the memory of the basic device
- recording of every tested cable for long-term archiving and customer's documentation
- clear monitor display of the current test process as well as statistical information, e.g. number of tested cables, specification of error-points in case of an error
- comfortable memory – management, e.g. the deletion of several cables in one step

Memory overview

[illegible]

[illegible]

[illegible]

[illegible]

technical information**electric**

operating voltage:	9 VDC by PSU connector 230 VAC / 50 Hz
power input / wattage:	2,5 W
test voltage:	8 V
test current:	3 mA
resistor threshold value:	appr. 5 k Ω
test time:	appr. 0,5 s
work frequency:	20 MHz
cable memory:	EEPROM for 1000 reference cables, up to 85.000 connections
display:	LCD, 2x16 chars, backlight
acoustics:	Piezo-Buzzer
number of test points:	384
stamp output:	3,5 mm socket jack, 3pin +12 VDC / GND / triggering: 0,1 s connected with GND
fuses:	micro fuse 5x20 mm KabTEC192-M: 500 mA T

mechanical

dimension:	W-H-D: 345 – 50 – 230 mm
weight:	3 kg

scope of delivery

basic device KabTEC192-M
PSU connector 230 VAC / 9 VDC
instruction manual
test point probe

optional

basic adapter I, II, III
custom – made adapter
stamp
PC – software KabTEC PC-Pro 3.0 (not available yet)
serial printer
customised programmed measurements

Your basic device:

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