KUFFERATH

Testing Technology GROUP

HK UniTest

by KUFFERATH GROUP

HK UniTest
All-in-one-Tester

Compact LV Tester

LV-TC-X-512-15V

TECHNICAL SPECIFICATIONS

IoT-Ready
Windows-based PC with an integrated 12” touch screen in full HD
Connections:
- Wi-Fi, LAN, USB
- Pin Probe, Programmable I/Os

Visual User Experience
Connector images, statistics, 2D-Map, Interactive Harness Drawing
Graphic Label Editor

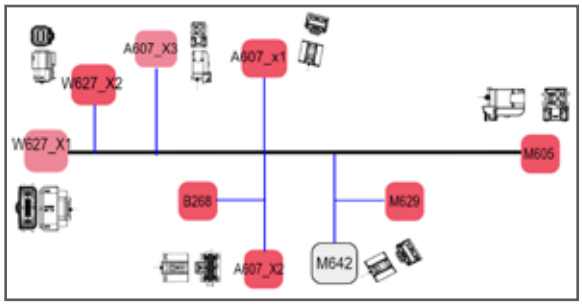
LV Measurement:
- 1V -15V; Adjustable
- 1 mA - 50mA Adjustable in current control mode

Pin Probe
- ESD Protected
- Safe, passive high-impedance input

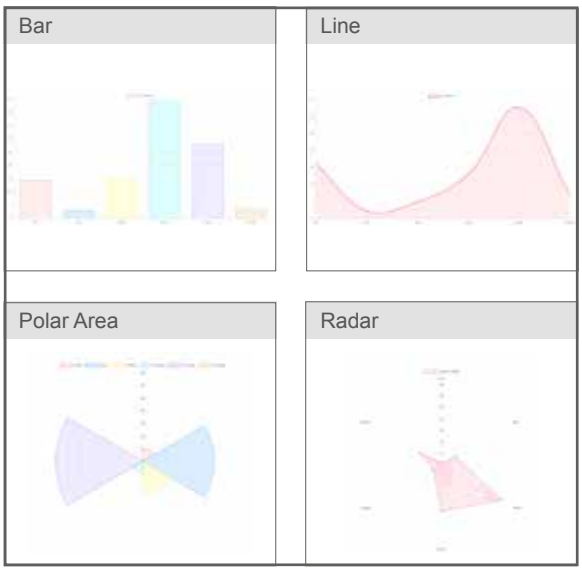
Test Points
512 test points (easily expandable) with ESD and overcurrent protection

I/O
Inputs:
- 8x NPN 24V IN
- Overvoltage, ESD protection

Outputs:
- 8x NPN 24V OUT
- 200mA current limit
- ESD, Overvoltage, Overcurrent, reverse polarity,
- overtemperature protection

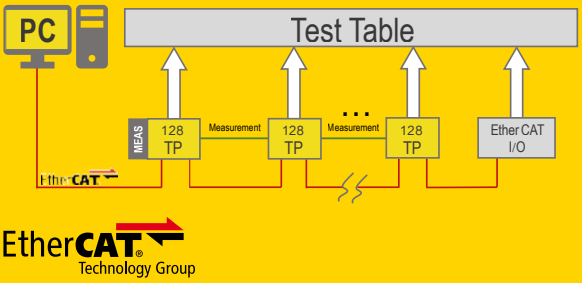


Clip Test



Statistics at a glance

HK UniTest
Low Voltage Daisy Chain Tester



EtherCAT Technology Group

LV Master Card
HK-LVT-TPM

LV Extension Card
HK-LVT-TPS

TECHNICAL SPECIFICATIONS

Controller Module
LV Measurement:
- 1V -15V; Adjustable
- 1 mA - 50mA Adjustable in current control mode
- Diode resistance measurement

Pin Probe
- ESD Protected, passive high impedance input

Test Points
128 test points with ESD and overcurrent protection.
Every Pin can be used for Testing, Measurement Resistance, Guided Assembly, Functional Test.

I/O
Inputs:
- 8x NPN 24V IN
- Overvoltage, ESD protection

Outputs:
- 8x NPN 24V OUT
- 200mA current limit
- ESD, Overvoltage, Overcurrent, reverse polarity, overtemperature protection

Compatible with HV Tester
This card can be used together with the HV tester to reduce the number of necessary HV test points. Any clip tests or numerous detections can be wired on the LV extension card.

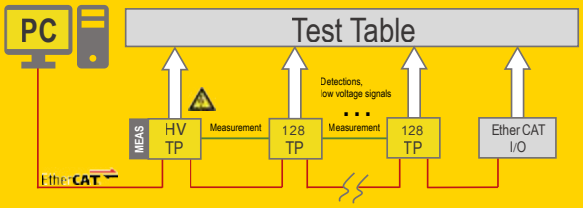
Flexible Placement
You can place test point cards meters away from each other, focusing on where the test points are necessary.

EtherCAT Interface
The communication is based on EtherCAT: IP Addresses and flat cables are not necessary. Just plug it in.
Other EtherCAT I/O and measurement devices fit together on the same bus.

Low Voltage Testing
Test for open connections, shorts, twists, relay contacts and more.

Built-in I/O
8/8 I/O are always available on-board. The number of I/O can be expanded with virtually no limit using EtherCAT.

HK UniTest
AC/DC High Voltage Combo with Low Voltage



EtherCAT Technology Group

EtherCAT Interface
The communication is based on EtherCAT: IP Addresses and flat cables are not necessary.
Other EtherCAT I/O and measurement devices fit together on the same bus.
When necessary, any number of I/O modules from Beckhoff can be added to the bus.

Self-Safe HV Test
In applications up to 5kV DC / 5mA, the base HV generator requires no additional safety components according to EN 50191 (VDE 0104)
Mixable with LV
The HV Rack can be expanded by adding LV test point cards. All of the functionality of HV and LV is compatible.

TECHNICAL SPECIFICATIONS

High Voltage Module

Compact option:
- HV DC and ISO test
- 200 - 7500 V DC ±1%
- 0.1 µA - 5mA tripping current
- Self-Safe
- Complete tester in a single 19” housing

Full option:
- HV AC, HV DC, and ISO test
- 50V – 6kV DC
- 50V – 5kV AC 50Hz/60Hz

HV Test Point Cards

Max 12 card slots per housing, expansion of housings possible

32 TP HV Card
- Size: 3HU
- Max Voltage: 4kV DC, 2.2kV AC

16 TP HV Card
- Size: 3HU
- Max Voltage: 5kV DC, 2.8kV AC

6 TP HV Card
- Size: 6HU
- Max Voltage: 8kV DC, 5kV AC

Controller Module

LV Measurement ranges:
- 1V -10V, 1mA - 2A
- 1V - 45V, 1 mA - 50mA

Pin-Probe
4 Wire
- Optionally available for all HV test point cards.
- Can be used by external measurement for special applications

I/O
Inputs:
- 8x NPN 24V IN
- Overvoltage, ESD protection

Outputs:
- 8x NPN 24V OUT
- 200mA current limit
- ESD, Overvoltage,
- Overcurrent, reverse polarity,
- overtemperature protection

HK UniTest ControlCenter Software

Label Editor | Reporting | Process Flow Editor

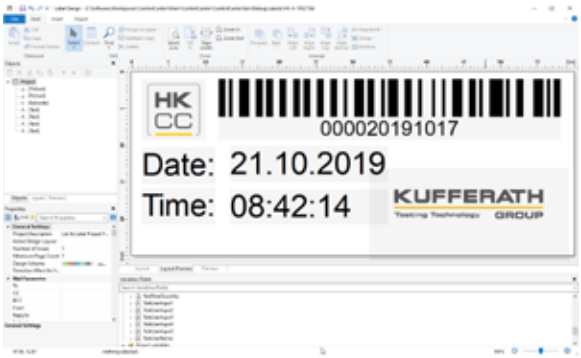
LV Test | HV Test | MES/KSK

.NET | SQL | EtherCAT Technology Group

LABEL EDITOR

Graphical Label Editor

Design yout Label in 5 minutes. Supports all printer types.



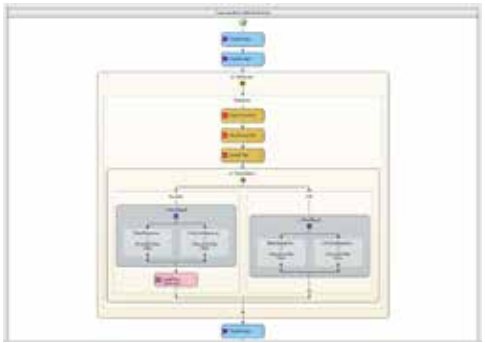
PROCESS FLOW DESIGNER

Intuitive Process Designer

Create your program by drag-and-drop. Use C# and VB to make it your own.

Wide range of functions

We didimost of the programming for you. Setup RFID, I/Os, Position Measurement, Guided Assembly in a few clicks.



REPORTING TOOL

Create your own reports

Using the MS SQL database and the reporting tool, you can adapt the data to fit your needs and processes.

Export Data

Create statistics, visualizations in any format (CSV, Excel, PDF etc.).

Web Reporting

Create statistics and reports while sitting in your office. Available on your phone or tablet
As long as you're on your factory network, you can remotely check the progress on your Android, iOS, or Windows device.

Process Quality functions

The software features an extensive Dummy Test which allows for safe process release.

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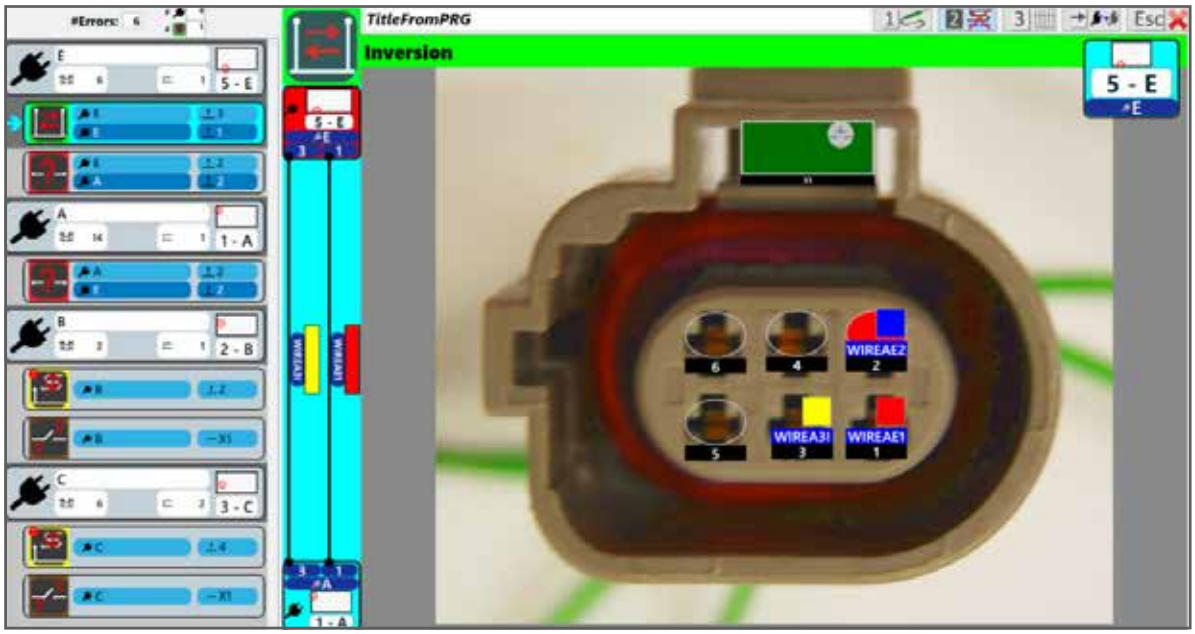
HETOS 3
WIRE HARNESS TEST

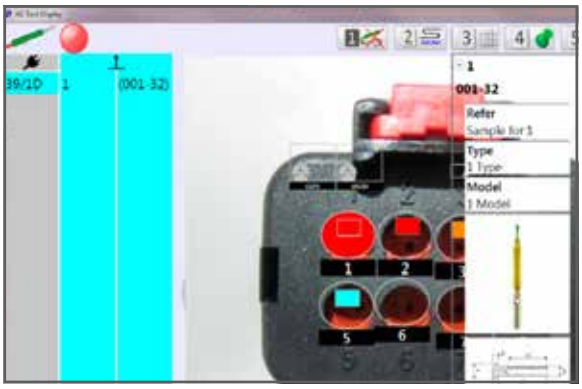
Harness Electrical Test Open System (HETOS) is a system designed primarily to test electrical wiring.

One of the most innovative feature is that the system allows several terminals (also called displays).



MAIN FEATURES

- Fast test software, working together with our Wire Harness Testers INTE.
- Very easy and visual user interface. Full list of all the errors found in the harness. Errors list refreshed fastly in a continuous test scan. Errors grouped by Connector.
- Advanced Error Deduction minimizes error-repairing time.
- Various test terminals within the same system.
- Advanced alarms system, to prevent fault production from its beginnings.
- Full test events log.



ADVANCED PROBE DIAGNOSIS

The probe diagnosis has a built-in feature to display information about the fixation pins with a single tap with the probe. Therefore, the images of pins, manuals, QR and anything else that can be shown for each pin facilitates the change of pin.

An advanced system of process statistics synthesizes all process data in a series of graphs: Production report hour by hour, Process efficiency, Seconds by Harness, Summary of process stops, and other KPI indicators, like OEE, Quality, Availability, etc …

Clear graphics to indicate a bottleneck problem at any station or any harness defect that is repeated often, can be detected quickly and act accordingly. The goal is to facilitate the detection of problems in its beginnings, in order to increase production and reduce rework.

Orderable lists of defects found during the test ans possibility of applying filters for specific dates and times, by S/N or P/N or by specific shifts.
List of defects by specific connector, with its visual aid, showing all information of defects found during the test.

CHT
Component Height Test

CHT is a system for verifying the correct insertion of the components of a fuse box, measuring the height of the elements with laser system.

HARDWARE

The CHT hardware is based on a 3D modeling system through a laser reading.

With the 3D model of the fusebox, the system test the different components by height and relief, measuring its height with an accuracy of less than 0.05 mm.

Small and compact, it can be mounted on a harness test board or on a structure together with an EV4 Vision system. Can be adapted for any size of fusebox.

The Component Height Test can work together with the EV4 Vision. It is a way to validate the good insertion of the elements tested by EV4 vision.

The system is robust against small deformations of the fuse box.

Very high speed test, approximately 2 seconds for a medium size box.

SOFTWARE

CHT comes with two applications: one for editing and the other for carrying out the test. The editing and test environments are completely graphic.

The system fully integrates into the EV4 viewer environment; a second CHT test can be requested if during the viewing test any of the components have been manipulated.

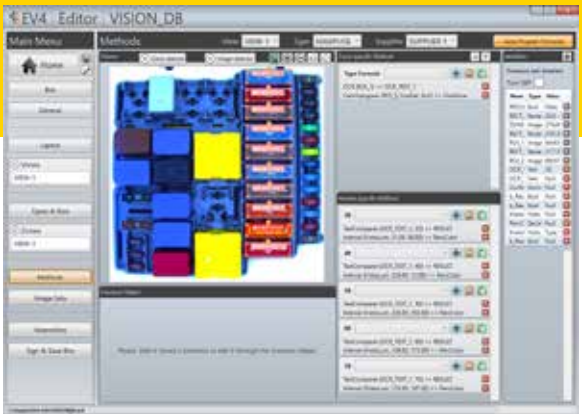
Register of the height of each component in correct and incorrect test, integrated with the register of data of the viewing test.

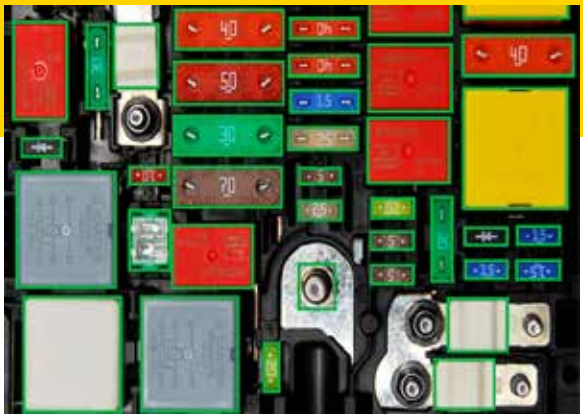
Simple programming and very fast calibration of the system.

Integrates fully into the HETOS system.

EV4 – Visual Inspection of Fuse Boxes and Surfaces

EV4 is a powerful vision equipment especially conceived for testing service fuse boxes: fuses, relays and other elements.





MAIN FEATURES

- Powerful identification methods of characters OCR, shapes, color classifications, deformations and dimensions.
- Supports different illumination systems to carry out analyses with different physical parameters.
- The system can be integrated in automatic lines, permitting test without personal intervention.
- The system fully integrates into the EV4 viewer environment.
- The system measurE THE height of components with an accuracy of less than 0.01 mm.
- Very high speed test, approximately 2 seconds for a medium size box.

EV4 TEST

EV4 is prepared to identify fuse boxes by direct reference or KSK wiring, also supports different illumination systems to carry out analyses of the image with different physical parameters.

Register of the tests done with its parameters, permitting to check the acquired images again.

The system can be integrated in automatic lines, permitting test without personal intervention.

EV4 has an accessory to check the height of the components, obtaining very high precision in a very short time of test.

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NR2
NUTRUNNER STATION

A complete solution for screwing control with a robust 3-axis arm.

Reliable and compatible with all existing tightening controllers.

The screw control software (NutRunner) is used to perform a tightening in a controlled and safe way.

MAIN FEATURES

- 3-axis control arm of own design.
- Sound feedback accelerates production.
- Full operation data log.
- Navigation system: Guide the operator following prefixed steps.
- KSK software.
- Full integration with Creasoft products.

COMPATIBLE WITH SEVERAL TIGHTENING CONTROLLERS

ATLAS COPCO DEPRAG DESSOUTTER STANLEY INGERSOLL RAND

Complete navigation system guides operator to follow prefixed steps. LED lights indicates from where to pick next cable, where to connect it and which screw has to be tightened.

NUTRUNNER EDITOR

The software editor of the test databases allows to configure all the parameters of the screw test in a very visual, easy and intuitive way.
To program a new screwing zone, it is only necessary to position the mobile arm in the area and click on a button.

PROCESS STATISTICS

NR2Report is an application that is part of the standard installation of the NutRunner software. NR2Report also monitors the production process in real time, notifying the operator when the CPK of the last n pieces is lower than the established one. This system avoids a high defective production since a possible problem is detected in its beginnings.

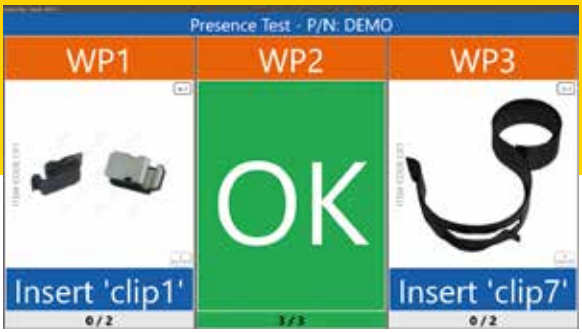
Export options of graphics and results to PDF and Excel.

Presence Test

Multi-user and multi-screen test software

Presence Test is a complete clip presence test solution.

It allows splitting the test board in several areas, assigning each area to a workplace or operator. The system can work both with wired fixtures and with the RF fixtures (wireless detection system).



TEST SOFTWARE

All operators can work at the same time since each one of them has an area assigned to the screen, showing specific instructions for each of the operators working. The standard operation is to show the following clip that they must insert. The system is fully integrated with HETOS.

- Possibility of using N monitors and the necessary subdivisions
- Full information on screen:
- Detection points and its current status.
- Current status of every clip on the test board.
- Additional info to be added above the clip image.
- All the texts that are shown to the operator are translatable.
- All colors are easily configurable.

EDITIONS

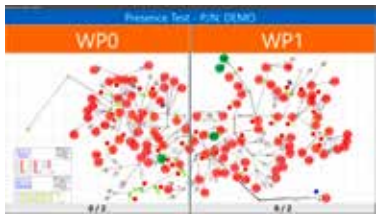
Software with the latest technology. It allows to easily and quickly edit a test database.

- Connection to the rack to test programmed points and detection points with a single touch of the probe.
- Drag&drop feature to assign each clip to each operator in a very easy and fancy way.
- Export and import the database in Excel format.
  Easily edit with Excel and import again.

MULTI-DISPLAY SOFTWARE

Clip images

Testboard schema



Harness Image Layout

HK UniTest by KUFFERATH GROUP

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