KUFFERATH

Testing Technology GROUP

Product Overview

HK UniTest
by KUFFERATH GROUP

GLOBAL.
FOR YOU.

Deutschland / *Germany* (Hauptsitz / *Headquarter*)

Slowakei / *Slovakia* • USA / *US* • Mexiko / *Mexico* • Nicaragua / *Nicaragua* • Brasilien / *Brazil*
Tunesien / *Tunisia* • Russland / *Russia* • China / *China* • Marokko / *Morocco*
Tschechien / *Czech Republic* • Bulgarien / *Bulgaria* • Rumänien / *Romania*
Polen / *Poland* • Ukraine / *Ukraine* • Portugal / *Portugal* • Türkei / *Turkey*

ABOUT US

Our testing technology ensures the high standard of the cable harness industry around the world.

Who we are and what we do

We are a medium-sized, international company with our headquarters in Moers, North Rhine-Westphalia, and have been a reliable and innovative company for our customers around the world since our establishment in 1995.

Tradition and innovation – two pillars of our corporate philosophy that have ensured constant growth as well as a global network.

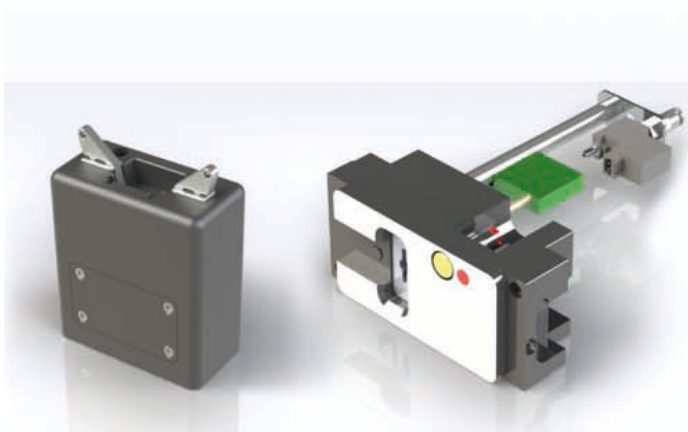
Our core business is testing engineering for precision technologies in the automotive industry, while we are also committed to meticulously fulfilling requirements from other sectors – always with a focus on our customers.

We, the Kufferath Group, have set ourselves the task of becoming the world's leading provider in the field of testing technology for the automotive industry.

Kufferaths main target is to satisfaction our customers every day with our best service and support to their growing demands.

Dependent from the hugh numbers of changes and requirements in the automotive market our strength is defined in short reaction times and providing our best solutions developed near to the customers needs.

MODULES



Mechanical Module

Standard Module

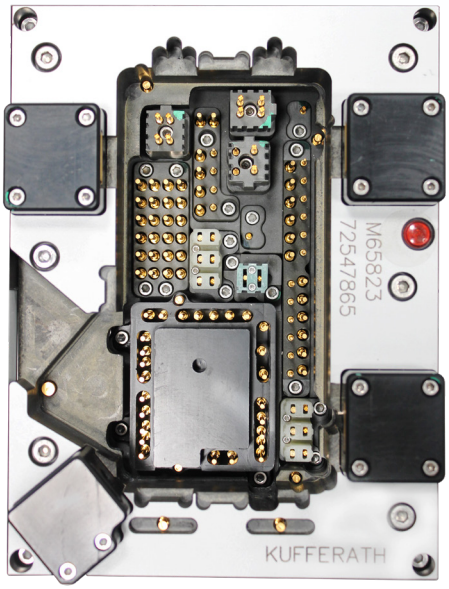
Special Module

Moving Block

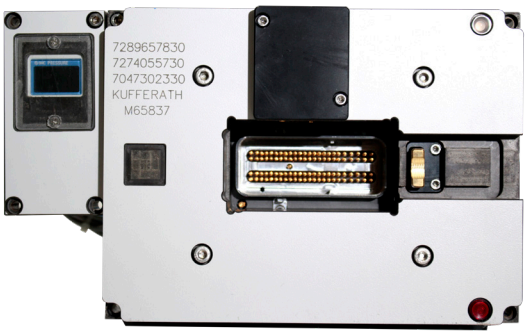
Design and function as per customer requirement, inspection of components for*:

- Function, seat, interlocking.
- Correct assembly of the test piece.
- Leak / pressure and vacuum test.
- Defective connections.
- Continuity test.
- Use of the correct plug.

- Also with colour coding (grey scales, too) and differentiation between similar plugs.
- Unlocking automatically or by pressing a button.

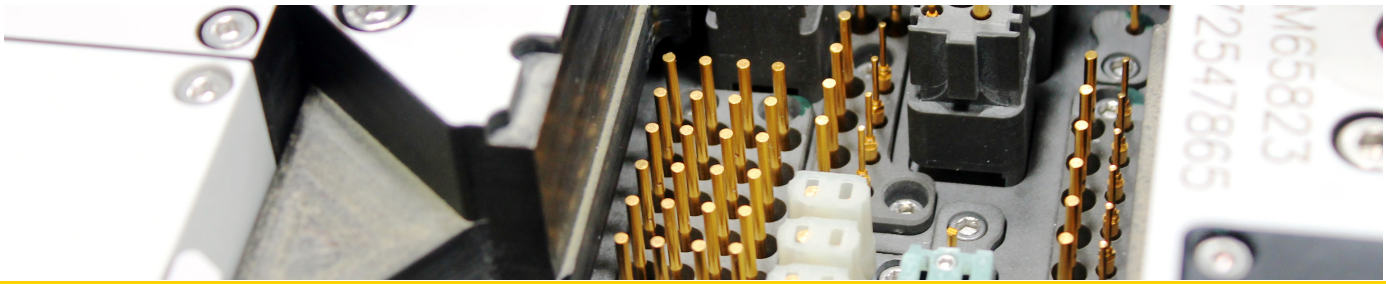


- Test result as printout (e.g. as label) and storage on data medium.
- Application of the Poka-Yoke principle highest quality and durability (low wear and tear) plus ease of maintenance, recognizable by, e.g.:



- Threaded test probes.
- Eroded contour inserts.

* can be implemented for all of our product lines



TEST TABLES

WIRE HARNESS/ VISION/ TORQUE

WIRE HARNESS

Design and function as per customer requirement:

- Modular design.
- Different model »shapes«.
- Standard design in aluminium profile.
- Maintenance openings in the front and back.
- Rollers with parking brake.
- Height adjustable.
- Many accessories such as touchscreen, label printer, barcode scanner available.

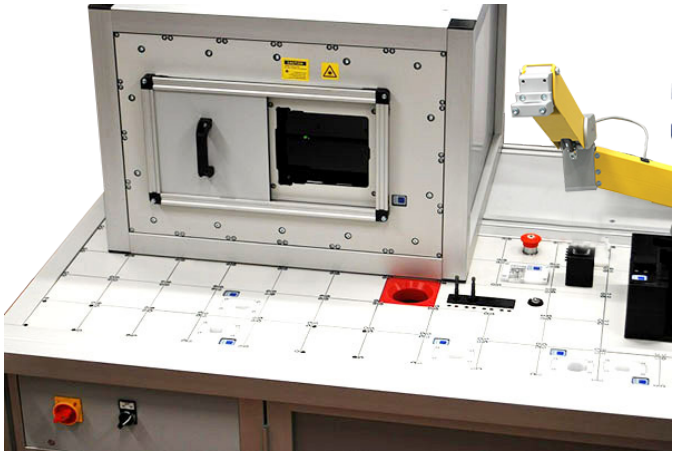
VISION

- Standard design in aluminium profile
- Two standard variants:

- Compact Vision Machine with Table.
- Vision System with Moveable Container.

- Colour cameras / monochrome cameras.
- LED lighting.
- Work station illumination (external lighting) assembly aid.
- HMI with assigned target placement / error display.
- Recognition ranges, e.g.:
- Component position control (height check):

- Code (Barcode).
- OCR(Barcode).
- Surface check.
- Colour.
- Freeform.
- Edges.



TORQUE

- Standard design in aluminium profile.
- Work station illumination (external lighting).
- Rotation angle and torque control.
- Monitoring of the screw position.
- Tool change box.
- Visualization of the screwing process.
- Torque-resistant holding fixtures.
- Detailed documentation.
- Many accessories such as touchscreen, label printer, barcode scanner available.

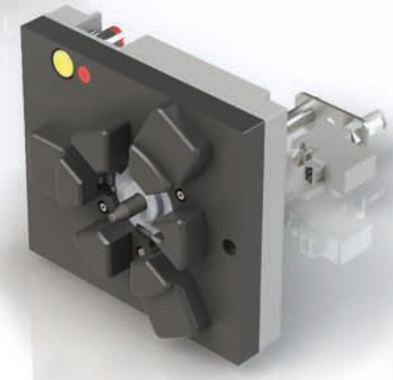
SPECIAL

Disc-Singularizer
(fully automatic system)

High-Frequency Tester
(semi-automatic system)

Four-Fold Push Test

Module in drawer form
with goods identification
(stamp)



Disc-Singularizer
(fully automatic system)

Hand Adapter

Our design engineers plan and draw the project on computers down to the last detail. This creates a graphic, digital 3D model on which all future work steps are based.

Our specialist expertise and decades of experience are focussed on the following sectors:

- Automotive.
- Aerospace.
- Power engineering.
- Pharmaceuticals and food industry.

With our many years of experience, we support you in the implementation of your testing technology:

From the idea to technical development and construction up to production of the right solution customized for you.

Contact us!

Stand-alone solution

Clips Testing

- Complete solution for single testing.
- Unique and diverse possibilities for any situation.
- Freely programmable system components.
- Low production costs compared to classical testing technology.
- 4.3 inch touch screen for flexible use:
  1. Clip testing.
  2. Stand-alone solution for individual tests.
- Automated analysis.

W-A-G-System (Wiring Assembly Guide-System)

The HK Unitest W-A-G System was developed as a basic system in order to achieve a quick and safe, as well as fault-free installation for any optional wiring of electrical cable harnesses:

- System for the reduction of installation faults in board networks.
- Visual Assembly Assist (VAA).
- Illumination of plugs / chambers.
- Pako-Pako system to dispense the right connector.
- Programmable via Excel files Excel files.
- Control of assembled and aborted harnesses production by parts.

HK-UNITEST
All-in-one-Tester

COMPACT LV TESTER
LV-TC-X-512-15V

1080P FULLHD EtherCAT Technology Group

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.

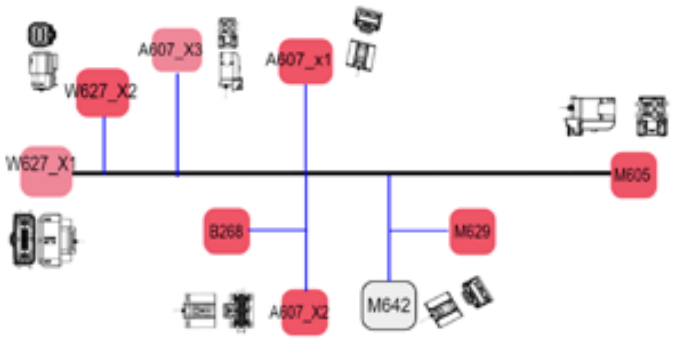
• LV Measurement:
- 1V -15V; Adjustable.
- 1 mA - 50mA Adjustable in current control mode.

• 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.

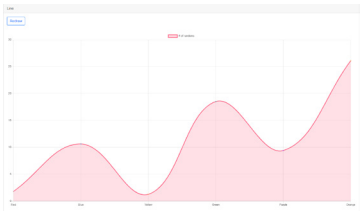
Outputs:
- 8x NPN 24V OUT.
- 200mA current limit.
- ESD, Overvoltage, Overcurrent, reverse polarity, overtemperature protection.

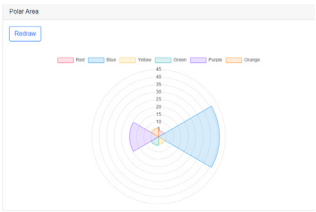


Clip Test

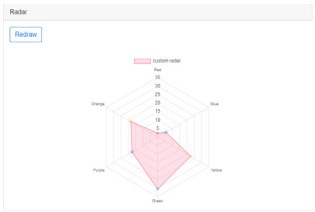
Statistics at a glance

Bar


Line



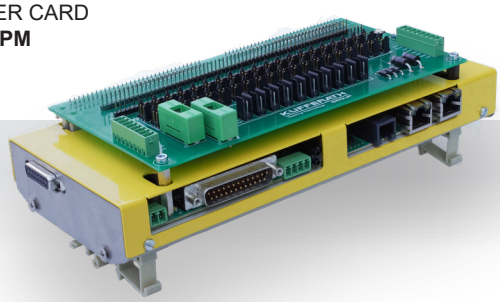
Polar Area



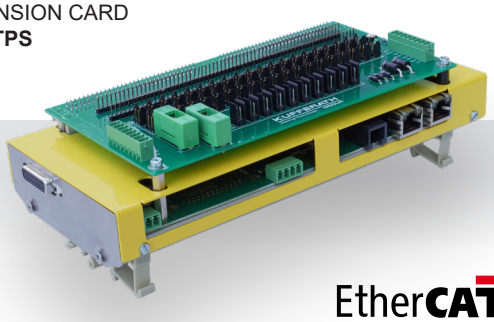
Radar

HK UniTest
Low Voltage Daisy Chain Tester

LV MASTER CARD
HK-LVT-TPM



LV EXTENSION CARD
HK-LVT-TPS



EtherCAT Technology Group

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.

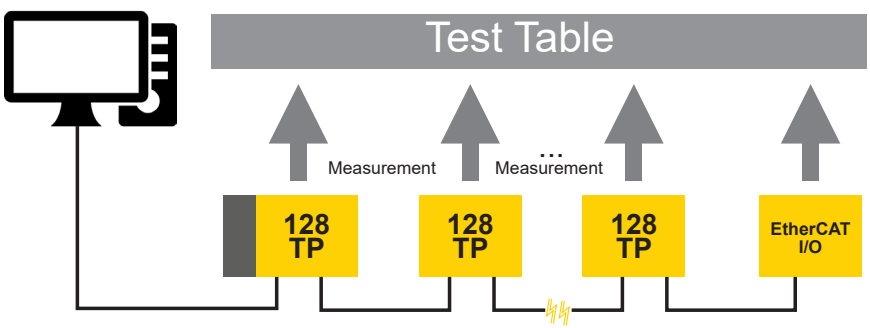
• Compatible with HV Tester
This card can be used together with the HV tester to reduce the number of necessary HV test points. Any clip tests or numerous detections can be wired on the LV extension card.

• 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.

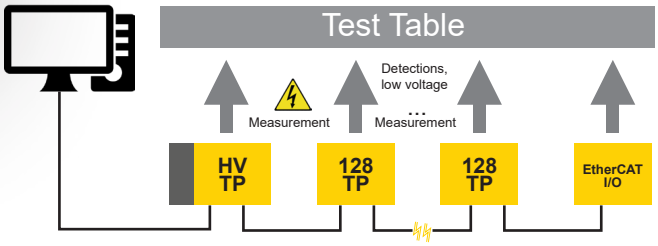
• Built-in I/O
8/8 I/O are always available on-board. The number of I/O can be expanded with virtually no limit using EtherCAT.



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

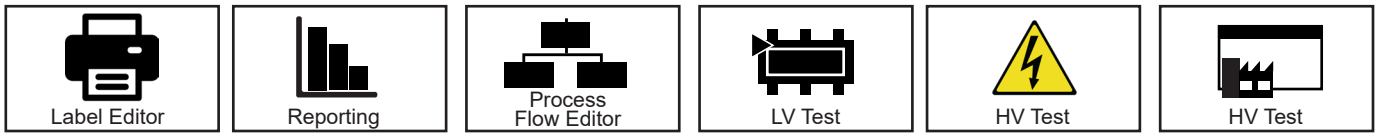
• HV Test Point Cards

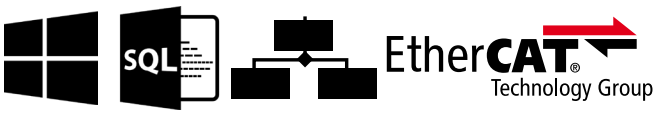
Max 12 card slots per housing, expansion of housings possible
- 32 TP HV Card
  Size: 3HU
  Max Voltage: 4kV DC, 2.2kV AC
- 16 TP HV Card
  Size: 3HU
  Max Voltage: 5kV DC, 2.8kV AC
- 6 TP HV Card
  Size: 6HU
  Max Voltage: 8kV DC, 5kV AC

• 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
HK UniTest Control Center

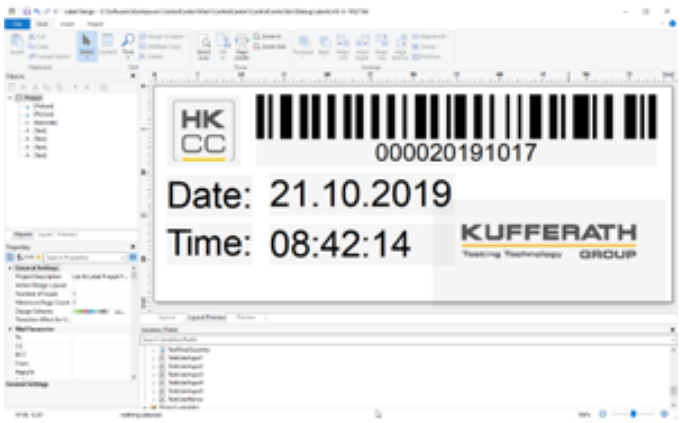




• LABEL EDITOR

Graphical Label Editor

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



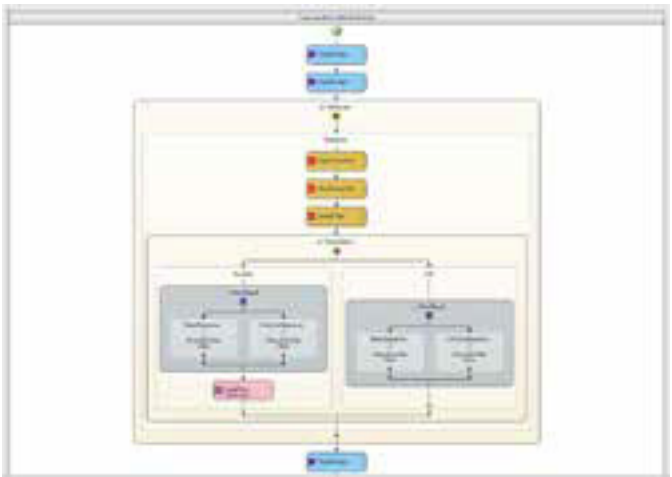
• PROCESS FLOW DESIGNER

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.

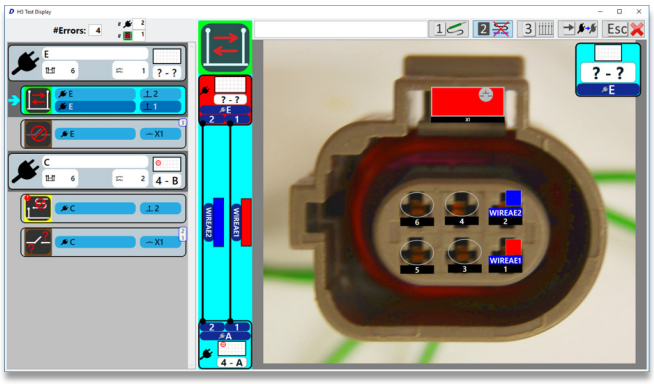
Process Quality functions

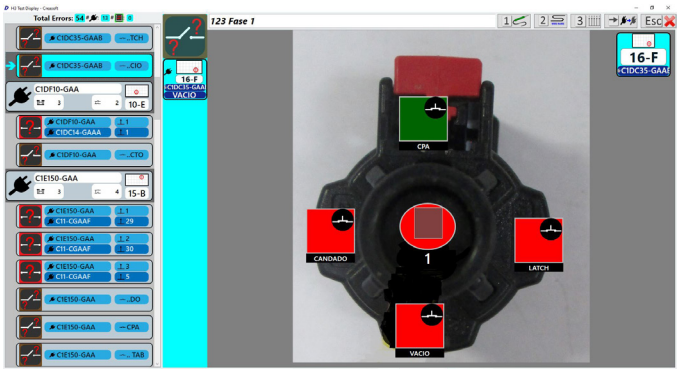
The software features an extensive Dummy Test which allows for safe process release.

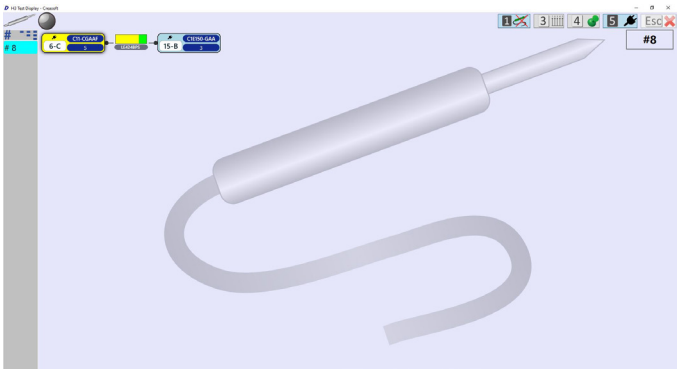
HK UniTest HETOS 3
WIRE HARNESS TEST

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

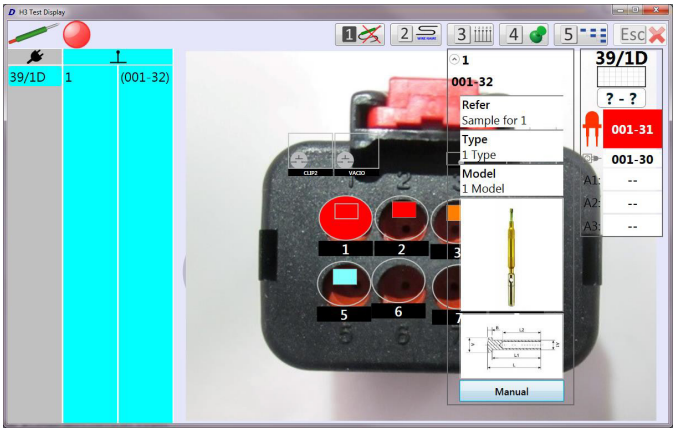
• Fast test software, working together with our Wire Harness Testers INTE.
• Very easy and visual user interface. Full list of all the errors found in the harness.
- Errors list refreshed fastly in a continuous test scan. Errors grouped by Connector.
• Advanced Error Deduction minimizes error-repairing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

The system allows various testing terminals in a test board. Every terminal shows the harness errors closer to that terminal, so operators can work at the same time repairing the errors.

Advanced AI software helps with this process and the operators are not affected with the connector manipulation of other operators.

All terminals are connected via LAN connection and works autonomously, updating data from server when necessary.

HK UniTest HETOS 3
WIRE HARNESS TEST

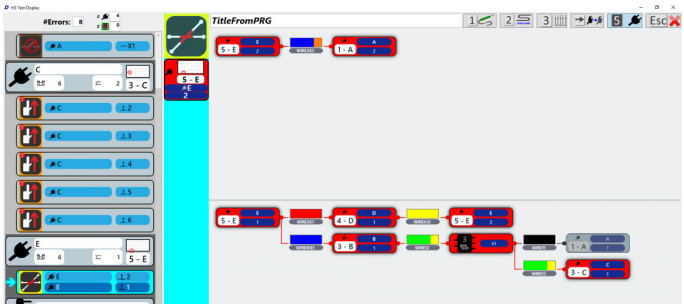


DVANCED PROBE DIAGNOSIS

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.

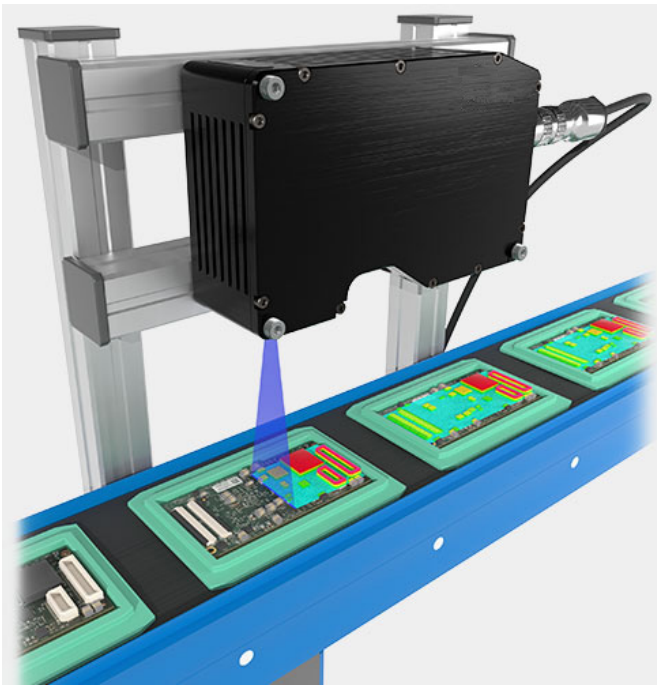


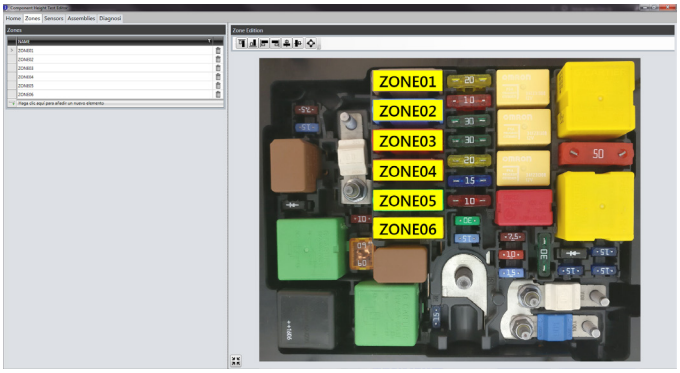
Orderable lists of defects found during the test ans possibility of applying filters for specific dates and times, by S/N or P/N or by specific shifts.

List of defects by specific connector, with its visual aid, showing all information of defects found during the test.

HK UniTest 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.

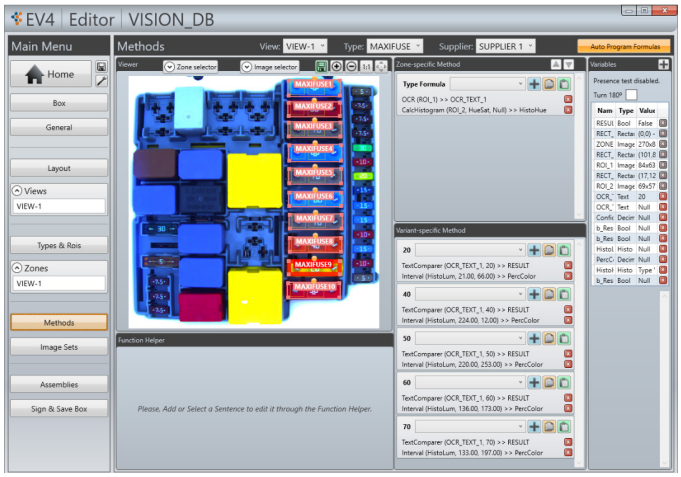
The system fully integrates into the EV4 viewer environment; a second CHT test can be requested if during the viewing test any of the components have been manipulated.

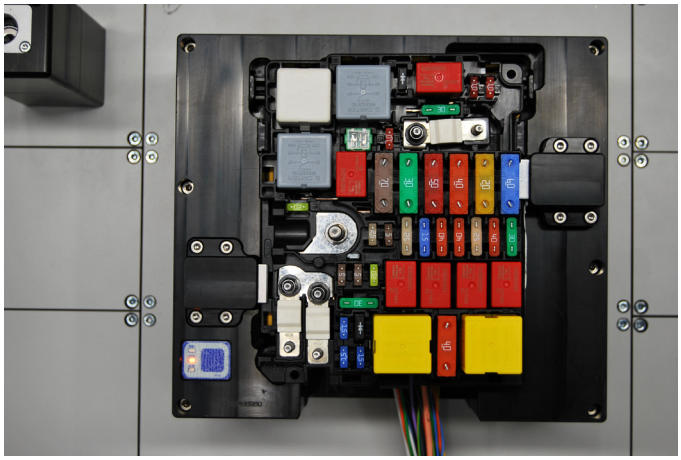
Register of the height of each component in correct and incorrect test, integrated with the register of data of the viewing test.

Simple programming and very fast calibration of the system.

Integrates fully into the HETOS system.

HK UniTest EV4-
Visual Inspection of Fuse Boxes and Surfaces





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.

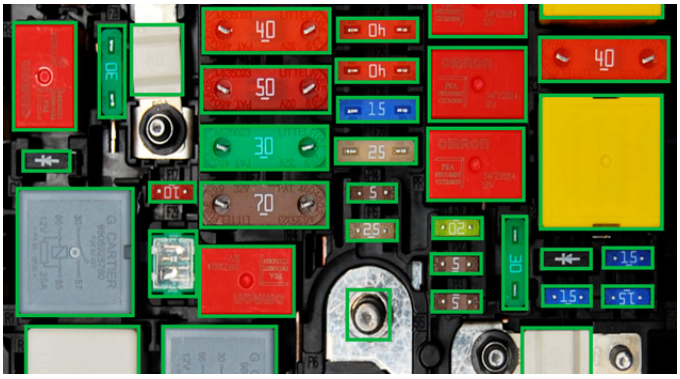
EV4 TEST

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.

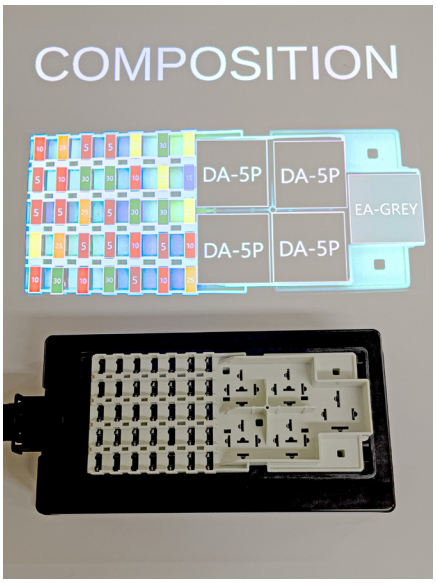


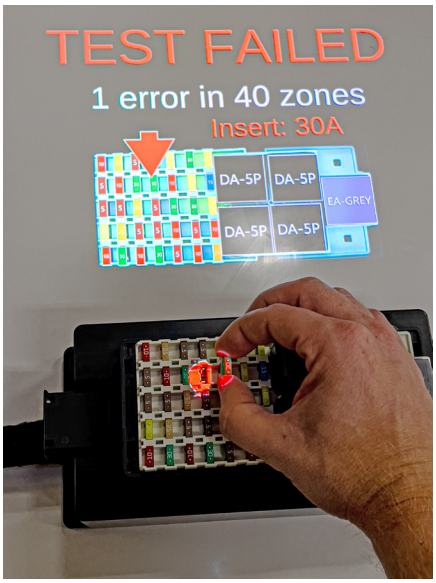
HK UniTest Augmented Reality System

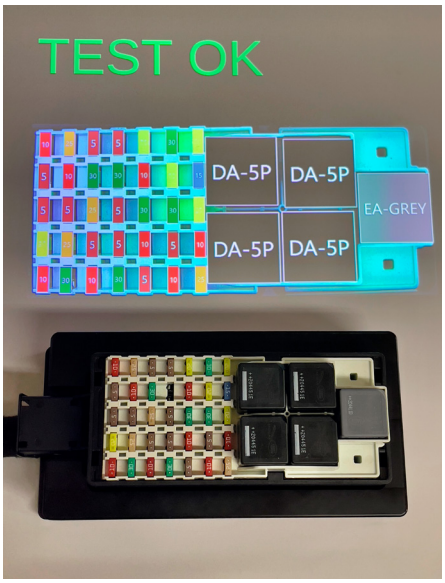
Augmented reality that increases operator efficiency

Description

The Virtual Aids System is a navigation system that guides operator by projecting clear instructions over the workbench.
Different types of information are projected on the working surface, giving instructions and useful information to the operator.

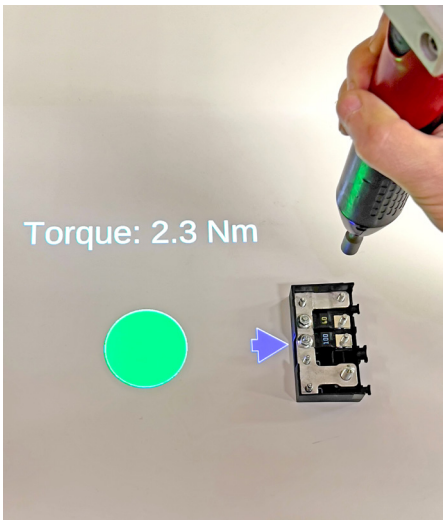






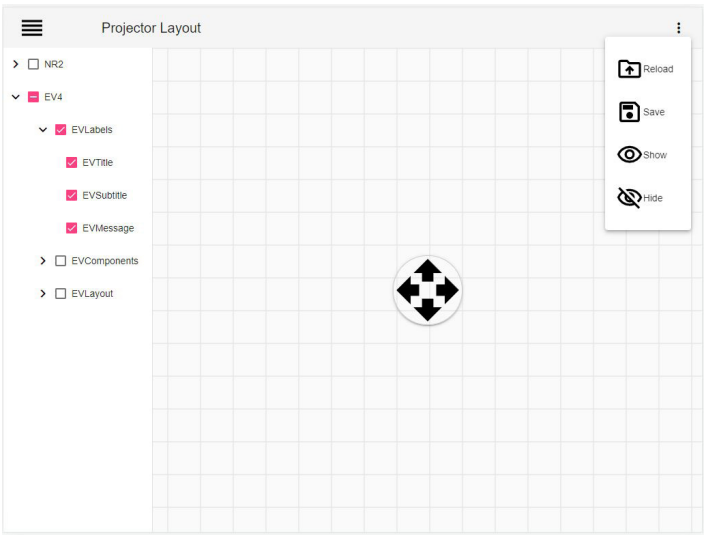
• Key points

Work efficiency is improved because operator is guided at all times in an easy and visual way.
All our products integrates this virtual aids system.



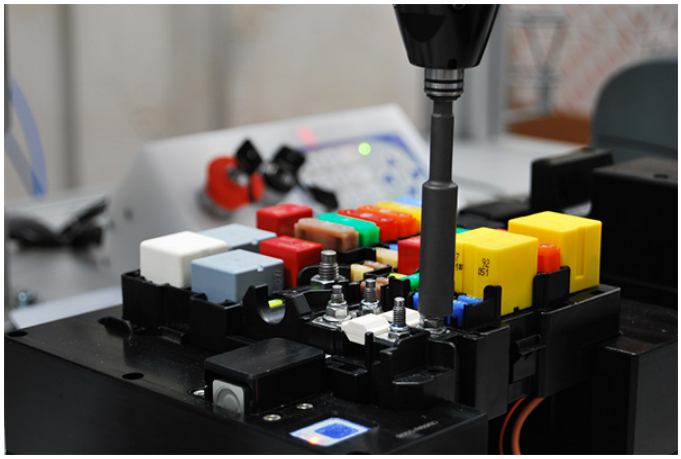
• Easy edition

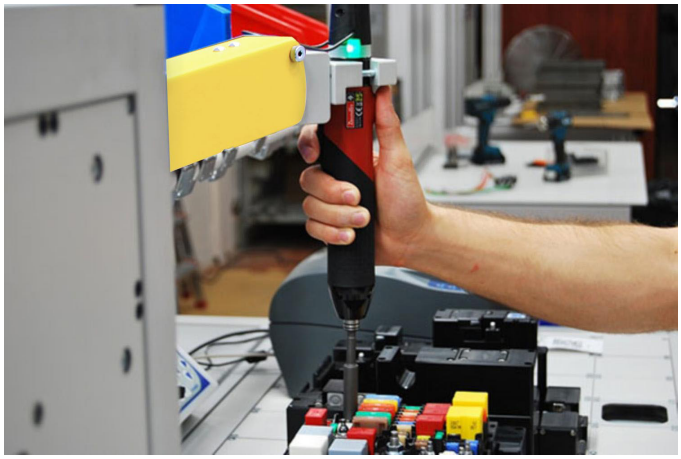
Easy layout editor that allows to easily moving and place the different projected elements to find the best location over the working surface.
Possibility of in-situ editing from mobile devices.



HK UniTest 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.



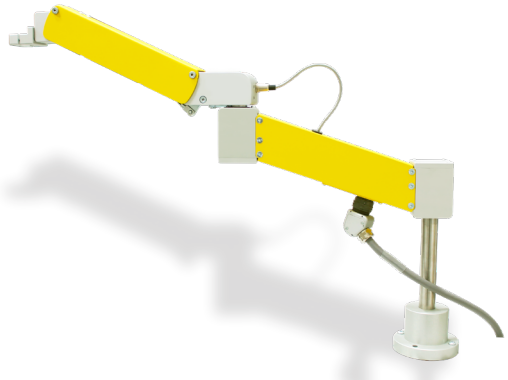


MAIN FEATURES

- 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

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.

HK UniTest 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.

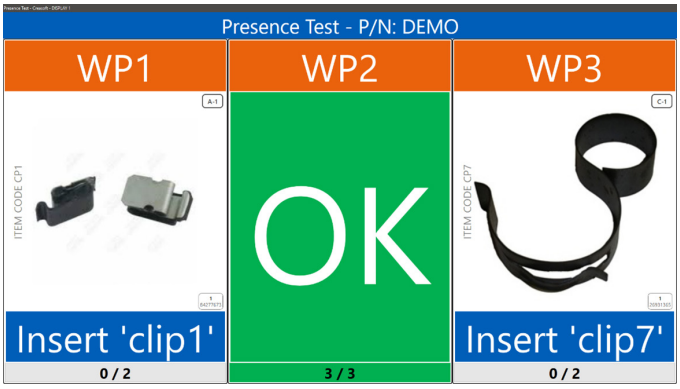
• EDITIONS

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

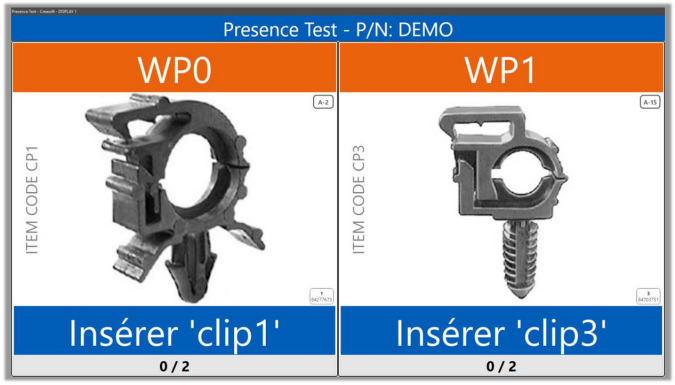
- Connection to the rack to test programmed points and detection points with a single touch of the probe.
- Drag&drop feature to assign each clip to each operator in a very easy and fancy way.
- Export and import the database in Excel format.

Easily edit with Excel and import again.

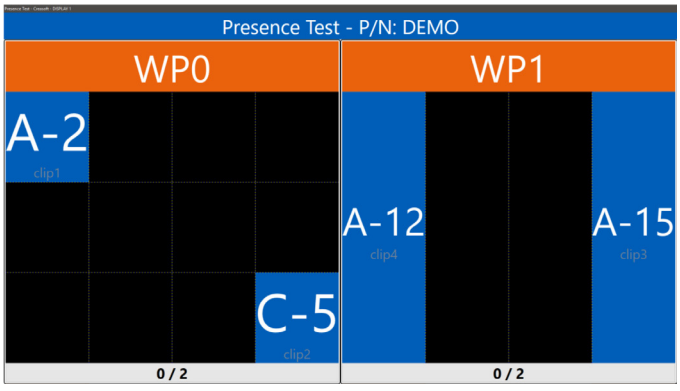
• MULTI-DISPLAY SOFTWARE



Clip images



Testboard schema



Harness Image Layout

Vending Machine

It is a design that complies with ergonomics, safety, ecological responsibility.
It is designed to occupy the smallest space on the production.

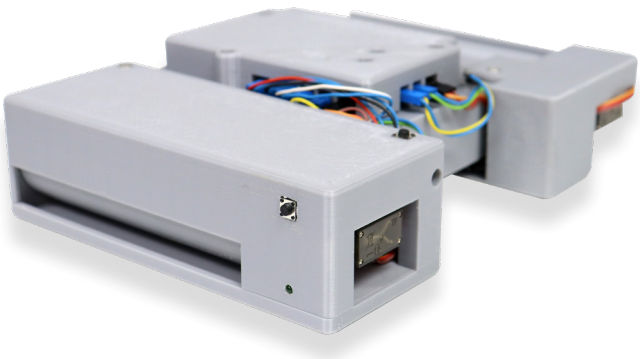
Its main function is to dispense probes, using an electronically based in a Tactile screen software.

Connected to a series of cartridges that store different probes inside tubes.
Designed with modular system, with which allows the connection of more dispensers.

The dispenser is designed with a friendly system for the search for fast response probes, touch screen connected with a fingerprint sensor and a keyboard hidden in the middle gate of the dispenser.

• **Fingerprint:** It allows the registration of users with which you can restrict the use of some administrative procedures, in addition to keeping a user control and use of probess, giving a security system to the dispenser.

• **Touch screen:** Ergonomic movement for comfort of users.



Cartridge

The Cartridge is the device that stores 10 tubes with a probes inside, each containing a unique reference code, with which they were located by the software.

When placing the part number of the pin in the search engine, the dispenser dispatches the tube to the pregate validating the user ID authorized for this operation.

Clip Switch/ K.A.R.S

• Features

-Reduce energy costs.
-Complies with environmental standards.
-Reduces installation costs.
-Increases flexibility.
-No wiring and no maintenance.

Clip testing system

Clip testing system with wireless modules. Each module incorporates a sensor that sends a radio frequency signal at the moment of clip insertion. Each sensor has an identifier to know who is sending the signal.

Next to the computer there is an RF receiver, in charge of receiving the signals and identifying the clips that have been inserted. the signals and identifying the clips that have been inserted.

• Benefits

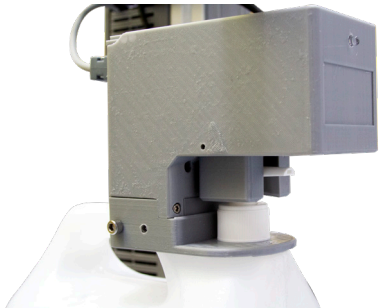
They are self-powered radio frequency transmitters.
-Shapes and sizes are designed to fit any application any application.
-The housing offers connection points
-Various connection variants.
-The system can work both with wired and wireless fixtures (RF).
-Compatible with two wireless emissors brands: SEMD and Cherry.

KUFFERATH AUTOMATED REGISTRATION SYSTEM

The Kufferath Automated Registration System allows you to have the exact control of the working period of your staff to optimize your company's resources. The Kufferath Automated Registration System also has a scanner for monitoring body temperature and dispensing the necessary antibacterial gel during this period of time.

K.A.R.S offers you:

-Identification by QR code scanning.
-Control of personnel information.
-Body temperature control.
-High temperature alert.
-Automatic gel dispensing.
-Interconnection between reviewers.
-Facial recognition.



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Kufferath Group

Kufferath Group

Kufferath Group Official