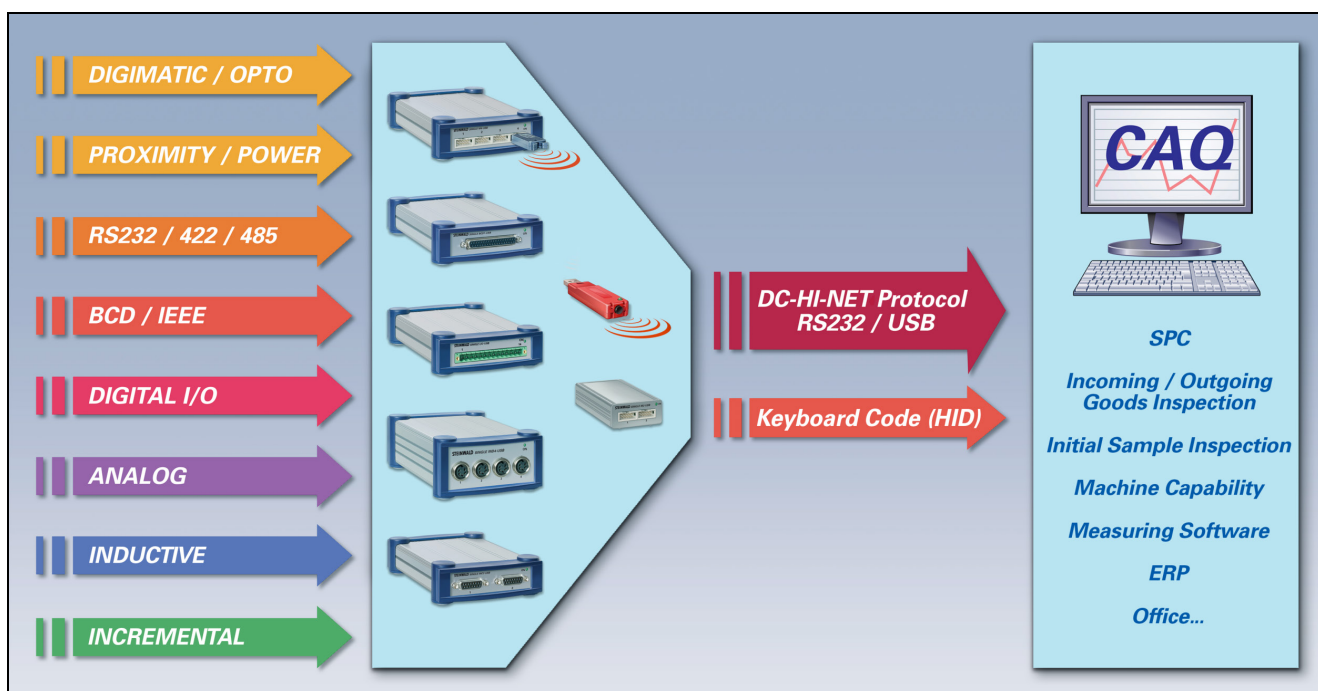# Overview

STEINWALD interface devices adapt your whole measurement and interface collection to one single interface. Our simple but powerful protocol is supported by all leading software packages for quality assurance and production control on PCs and workstations. Independent from measurement devices and software suppliers you select your appropriate solution for process control.

The advantage: Complicated driver installations and conflicts with other system components (like with PC slot cards) are avoided. You get a secure solution which is easy to install and to extend.

Components for wireless measurement data logging as well as software tools complete the product range.

DC-HI-NET connects measurement devices, stored-program controllers and machines from the following manufacturers:

A&D • ACCRTECH • AEROEL • Agilent • Ahlborn • Ahotec • Akashi • Alluris • Althen • Ametec • Ateq • Atlas Copco • ATORN • Avery Berkel • Bahco • Balluff • BAQ • Bareiss • Baumer • Beta Lasermike • Bizerba • Böhm • Bosch • Bowers • Burster • BÜ-TEC • Byk-Gardner • Caliper • Chatillon • CMC-KUHNKE • ColorLite • Datacolor • DeFelsko • Delcam • Deltronic • Denver Instrument • DEPRAG • Desoutter • Karl Deutsch • Diatest • Dini Argeo • DL-Systeme • Easydur • ECM • Edmunds Gages • Elcometer • Elektro-Physik • Elgo • EmcoTest • Erichsen • Ernst • ESI • ESI-TRON• ETH • FAGOR • Faro • Feinmess Suhl • Fischer • Flexim • Fluke • FORM+TEST • Fowler • Frank • JW Froehlich • Furness Controls • Galdabini • Garant • General Inspection • Gigahertz-Optik • Gossen-Metrawatt • Gretac Macbeth • Grundig • Hameg • HBM • Hegewald & Peschke • Heidenhain • Helios-Preisser • Hengstler • Hess • Hewlett Packard • Hexagon • HIOKI • Hirt • Hommel-Etamic • Imada • IMESS • Induk • InnovMetric • INSIGHT METROLOGY • Instron • IST • JLI • Jenoptik • KB Prüftechnik • Keithley • Keller • Kern • Keyence • Kistler • Knäbel • Konica-Minolta • Kordt • Krautkramer • Kroeplin • Krüss • Kübler • Dr. Lange • Lenzing • Leybold • Lloyd • Lorentzen & Wettre • Lorenz Messtechnik • L.O.T. • MACHEREY-NAGEL • Magnescale • MAGNET-PHYSIK Dr. Steingroever • Mahr • MARK-10 • Marposs • Marui-Keiki • MAV • Mavomatic • Mecmesin • Megatron • ME-Systeme • Mercer • MetLogix • Metro • Metrohm • Metronics • Mettler Toledo • Micro Epsilon • MicroStudio • MicroVu • Minebea • Mitutoyo • Newport • Nieberding • Nikon • OBLF • OGP • Ohaus • OKM • Olympus • Panametrics • PAV • PCE • Pfeiffer Vacuum • Phynix • Precisa • Precitec • Qness • Raytek • Reicherter • Rhewa • Röntgenanalytik • RSF • Saltus • Sartorius • SAS • Sauter • Scaltec • Schatz • Schenck • Schleich • Dr. Schleuniger • Dr. Schneider • Sensor Instruments • Shimadzu • Shimpo • Siemens • Siko • Sikora • SIP • Soehnle • Solartron • Solex • Sony • SOURCETRONIC • Stanley • Stiefelmayer • Stotz • Sylvac • Taylor Hobson • Telemeter • Tesa • TesT • Textest • Tira • Trimos • Ultrakust • UTS • Versatile • Vici • Vision Engineering • Vögtlin • Walter • Wayne Kerr • Wegu • Weidmüller • Wenglor • Wenzel • Werth • Dr. Wiesner • Wika • Wilhelm • Willtec • Wolpert • WTW • Yokogawa • Zeiss • ZES Zimmer • Zumbach • Zwick/Roell • Zygo

Overview

DC-HI-NET interface systems connect all **measurement devices and data sources** with interfaces like:

Interface	Measuring technique
DIGIMATIC (MarConnect, MULTIcom, DATA VARIABLE)	▪ Calipers, micrometers, dial gauges, height gauges, protractors ▪ Display units, coating thickness- / force- / roughness-gauges / measuring microscopes …
OPTO PROXIMITY POWER	▪ Calipers, micrometers, dial gauges, height gauges, protractors ▪ Display units …
RS232 RS422 RS485	▪ Balances, display units, colour- / coating thickness- / flow- / gloss- / height- / force- / pressure- / roughness-tester, measuring machines, measuring projectors, multipoint measuring instruments, multimeters ▪ Mobile measuring devices, camera measuring systems, coordinate measuring machines, measuring software, testing machines …
BCD (parallel, serial)	▪ Display units, force gauges, spring testers …
IEEE	▪ Multimeters …
DIGITAL I/O	▪ Controlling of digital inputs/outputs (e.g. relays, end contacts, machine controllers …)
ANALOG	▪ Pressure switches, length measuring instruments, column display units …
INDUCTIVE	▪ Inductive probes (halfbridge / fullbridge)
INCREMENTAL	▪ Incremental transducers with sinusoidal voltage or current interface, TTL, RS422

via one single standardized **interface** to your **software** for

- ▪ Computer Aided Quality assurance (CAQ)
- ▪ Statistical Process Control (SPC)
- ▪ Manufacturing Execution Systems (MES)
- ▪ Production Data Collection (PDC)
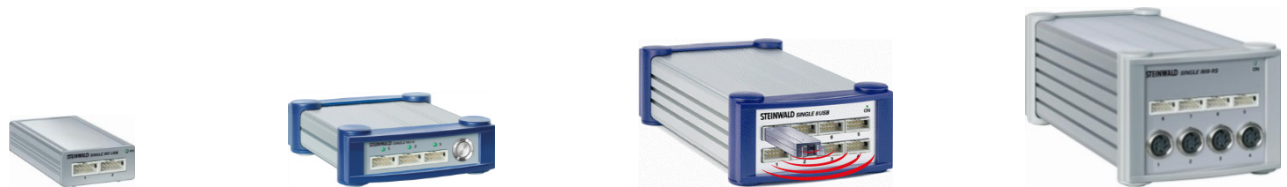- ▪ Lab data processing
- ▪ Statistics

on PCs.

Overview

The device-independent **DC-HI-NET** protocol provides comfortable functions. Simple commands allow you to pre-process the data. This removes processing load from the host system, and real-time capabilities improve substantially. Features like the automatic measurement device recognition and free configuration protect you from inconvenient administrative and configuration tasks.

The DC-HI-NET operating system carries out the functions:

- Measurement device recognition and transmission protocol adaptation
- Communication with the measurement device and parameter assignment
- Data format conversion into the unified format
- Synchronized data capture and transmission
- Data buffering in the system memory
- Dynamic data pre-processing like calculation of maximum, minimum and range values
- Group operations for multipoint measurement
- Self-test and monitoring

The function **automatic measurement device recognition** allows to connect measurement devices with interfaces like DIGIMATIC or OPTO / PROXIMITY / POWER to one single **MULTI** interface. The data format is automatically recognized by the interface; additional adjustments are not required.

DC-HI-NET MULTI – the universal interface for:

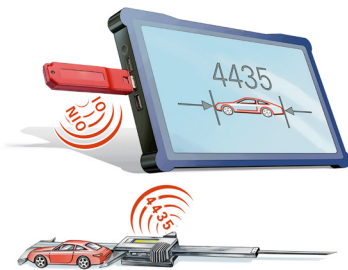| DIGIMATIC / OPTO … (Standard)	RS232 / 422 / 485 (Option)	IW / bt / DIGITAL I/O (Option)
Measurements with interface:	**Measurement devices like:**	**Configuration for:**
▪ Mitutoyo DIGIMATIC ▪ Sylvac OPTO ▪ Sylvac PROXIMITY ▪ Sylvac POWER ▪ Mahr MarConnect ▪ Atorn multiCOM ▪ Helios-Preisser DATA VARIABLE ▪ Kroeplin DIGIMATIC	▪ Balances, hardness tester, coating thickness-/force-/height-gauges … ▪ Display units, colour-/form-/roughness tester, multimeters … ▪ Measuring software for coordinate measuring machines, profile projectors ...	▪ IW receiver MULTI IWx ▪ bt receiver MULTI bt ▪ digital input/output

DC-HI-NET IW: Connection of wireless measurement devices

- Receiver for measurement instruments with **integrated wireless interface**:
  - Mahr i-wi / Helios Preisser iw
- Receiver for a connection with **PC and STEINWALD-Interfaces**
- Remote request of values triggered by foot switch (optional)
- Measurement device ID numbers are saved in the receiver - **WITHOUT any additional software application!**
- Data transfer to CAQ software with STEINWALD protocol

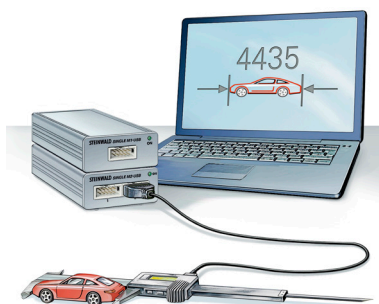## DC-HI-NET bt: Wireless measurement data logging

- **Multi-vendor:** Transmitter for:
  - DIGIMATIC / MarConnect / OPTO / PROXIMITY / POWER
  - RS232
- Receiver for a connection with **PC and STEINWALD-Interfaces**
- Transmission: **Bluetooth**® (2,4 GHz)
- Remote request of values triggered by foot switch (optional)
- Transmitter ID numbers are saved in the receiver - **WITHOUT any additional software application!**
- Data transfer to CAQ software with STEINWALD protocol

DC-HI-NET SINGLE x-K: Gage connection via the keyboard interface (HID)

- PC connection via USB keyboard interface (HID) and measurement devices with interface:
  - DIGIMATIC / OPTO / PROXIMITY / POWER
  - RS232
- **Wireless** measurement device connection (optional)
- Configurable measurement process and timed data capture
- Power supply via PC USB interface
- Data transfer in keyboard code - into each software: Office, CAQ, MES, ERP... **WITHOUT any additional driver!**

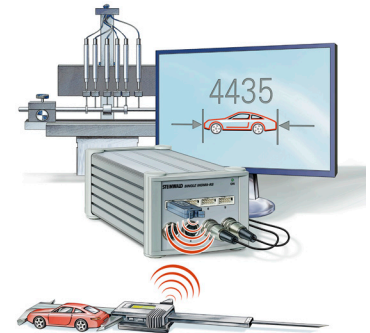## DC-HI-NET SINGLE x-USB: Measurement device connection via USB interface

- PC connection via USB (virtual COM port) and measurement devices with interface:
  - DIGIMATIC / OPTO / PROXIMITY / POWER
  - RS232/422/485 / BCD / IEEE
  - Incremental / I/O
- **Wireless** measurement device connection (optional)
- **Dynamic** data preprocessing (MIN/MAX/Range)
- Multipoint measurement
- Power supply via PC USB interface
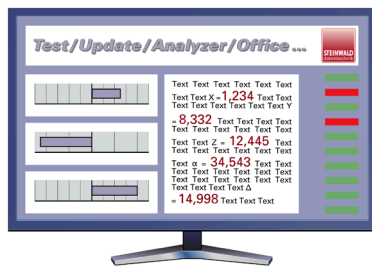- Data transfer to CAQ software with STEINWALD protocol

DC-HI-NET SINGLE x-RS: Measurement device connection via RS232 interface

- PC connection via RS232 interface and measurement devices with interface:
  - DIGIMATIC / OPTO / PROXIMITY / POWER
  - RS232/422/485
  - Inductive / Analog
- **Wireless** measurement device connection (optional)
- **Dynamic** data pre-processing (MIN/MAX/Range)
- Multipoint measurement
- Integrated power supply
- Data transfer to CAQ software with STEINWALD protocol

Software Tools

- **MessBase light:** Measurement data transfer via simulated keystrokes. Including simultaneously triggering and timed data capture.
- **MessBase plus:** Example sheet for transfer of values from "DC-HI-NET" interfaces to Microsoft Excel$^®$. Including graphical and numerical online measurement value display, measurement cycle planning, tolerance monitoring and channel connections.
- **DCDemo32:** For system test independent from the application software (real-time presentation of measured values on PC monitor), interface configuration, firmware update and error diagnosis
- **Driver library:** DLL for Microsoft Windows$^®$ to connect DC-HI-NET interfaces to software applications.

Services

We implement fast and cost-efficient drivers **for special measurement equipment** into our system software. Thanks to the standardized DC-HI-NET protocol, you are able to control all your measurement devices using one unique host software.

For tests we offer **leasing devices**. You can test your host software together with the measurement equipment under real conditions during the quote phase.

For your projects we support you with **installation and setup of** the whole solution. We have experience equipping production lines with measurement and control systems, CAQ and SPC. As a supplier-independent provider of components for measurement technology and quality assurance, we possess a wide range of know-how which often helps more than highly specialized knowledge of a single product.

For technical support we operate a **hotline**. Normally, we support our customers free of charge, but we also offer support contracts to guarantee certain reaction times and service levels.

We are continuing to enhance the DC-HI-NET system compatibly. Devices already in operation can be equipped with new functions via **updates** to the operating system.