DEWESoft®

WELCOME TO THE DEWESOFT EXPERIENCE. ONE SOFTWARE, ONE HARDWARE, ONE SOLUTION.

HARDWARE HIGHLIGHTS

HIGHEST ACCURACY
Even extremely small, Dewesoft power analyzer is highly accurate with 0.03% accuracy

0.03 %

HIGH SAMPLE RATE
Dewesoft data acquisition hardware features high sampling rate amplifiers with 1 MS/s sampling rate for the HS series.

1 MS/s

VOLTAGE INPUTS
Measurement ranges up to 1600 V DC (CAT II 1000V)

FULLY ISOLATED
The worry free solution provides isolation on the sensor side (channel to GND, as well as, channel-to-channel) and even isolated sensor excitation! Less noise, no ground loops, best signal quality.

1600 V$_{DC}$

FULLY SYNCHRONIZED
Data from various sources are perfectly aligned: Analog, Digital, Counter, Vehicle buses, Video, ...

R3

KRYPTON

R2DB

TOTAL SOLUTION

Combine your power measurements with NVH, combustion analysis, Vehicle Dynamics and other powerful Dewesoft tools.

INTERFACES

Intelligent Interfaces for simple and reliable integration to other systems. DCOM, CAN, EtherCAT®, Ethernet, XCP

SMALLEST POWER ANALYZER

SIRIUS technology is allowing us to build the smallest power analyzer in the world.

PLUG AND PLAY

Any device, sensor or signal. Smart sensors with TEDS are recognized automatically.

FLEXIBLE AND SCALABLE

Dewesoft allows to customize the instrument exactly for your needs. Select instrument and amplifiers and build your perfect measurement instrument. Use the All-In-One Instruments with up to 64 input channels for high channel counts or synchronise any number of modular Sirius units for distributed measurement applications.

TEMPERATURE RANGE

Our instruments are the perfect solution for summer and winter testing. The wide operating temperature range allows using them down to -30° C.

DEWESoft®   SIRIUS-R8DB

R8DB

KRYPTON ONE

SIRIUS

SOFTWARE HIGHLIGHTS

The Dewesoft Power Analyzer combines the functionality of a couple of products in just one instrument.

Our Power Analyzer isn't just the smallest one in the world - it's also the most capable. Our flexible hardware combined with Dewesoft X creates a whole new world of testing possibilities for electrical measurement applications.
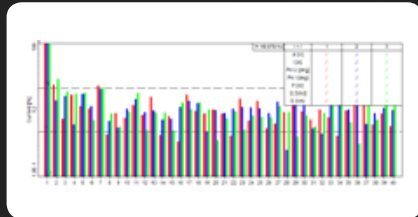
POWER ANALYZER
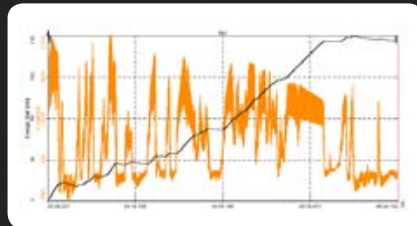P, Q, S, PF, cos phi, …
more than 100 calculated values
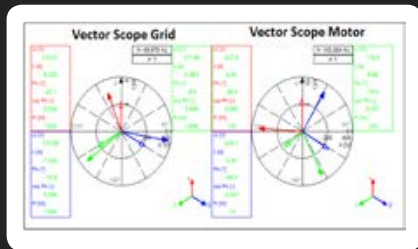
POWER QUALITY
FFT, Harmonic FFT, Harmonics, Interharmonics, Higher Frequencies, Flicker, Flicker emission etc.
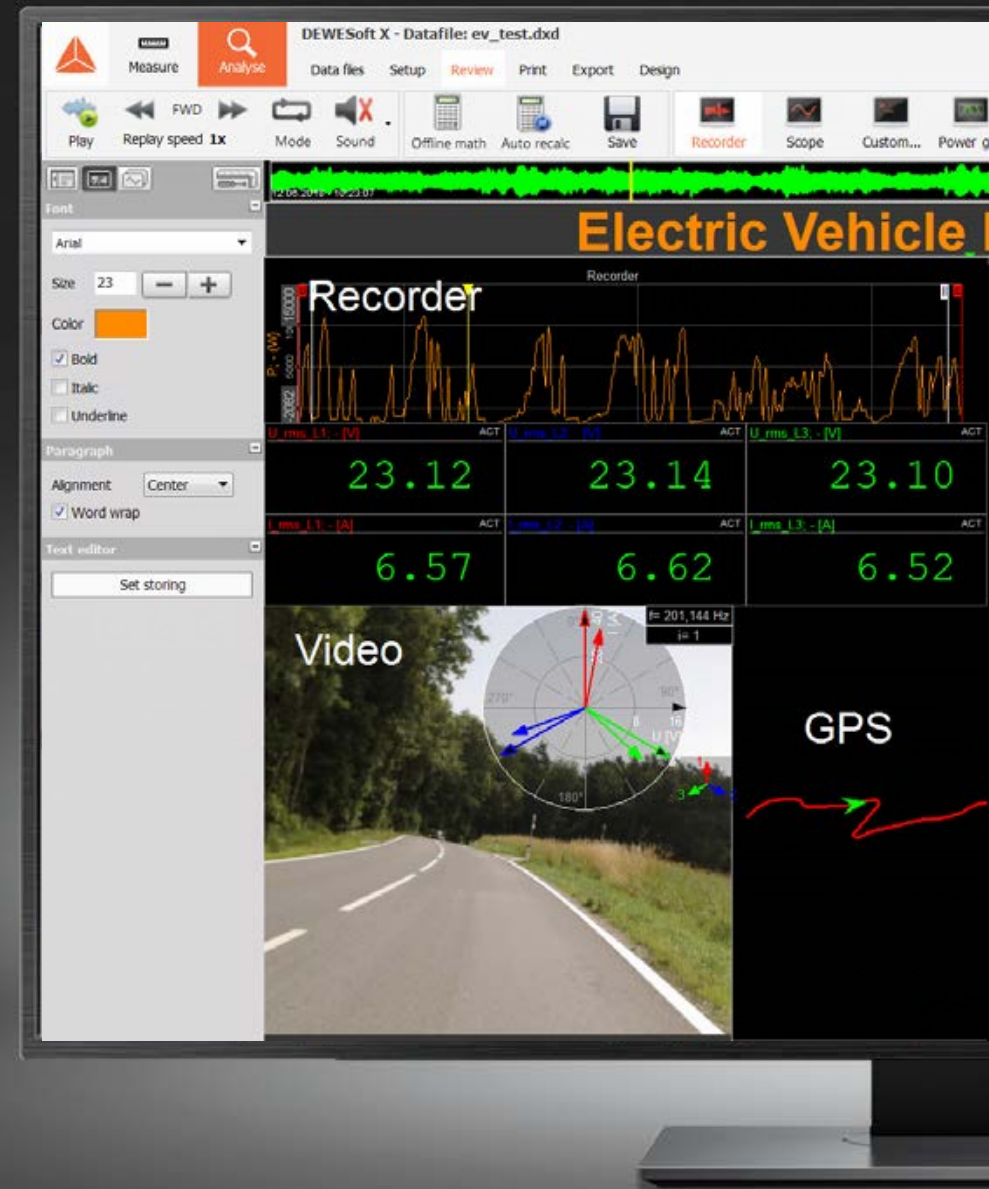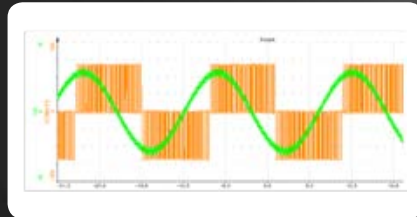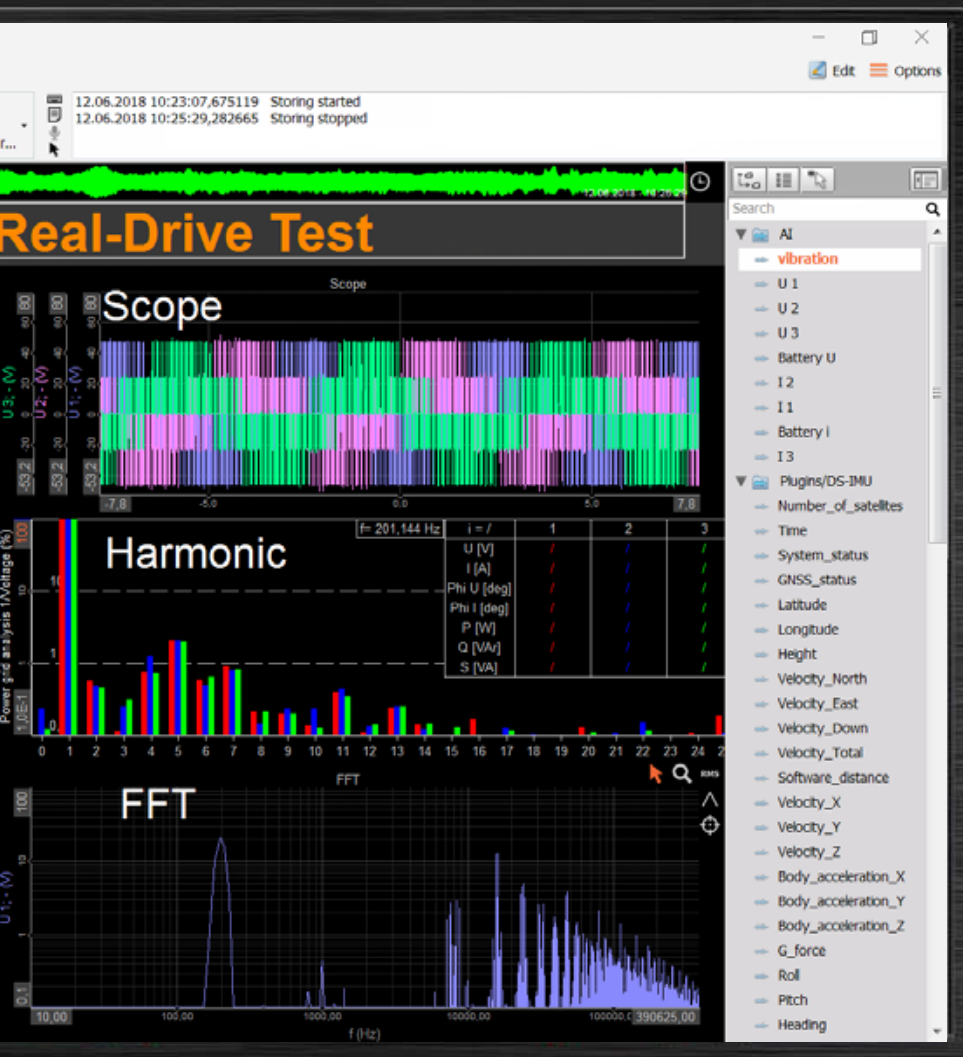
RECORDER / DATA LOGGER
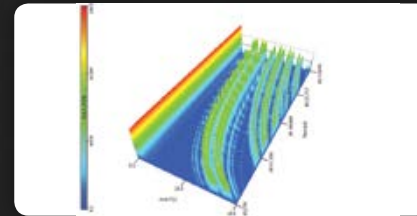Raw data storing in full sampling rate

RAW DATA
Raw Data are essential for detailed analysis of your electric machine. Transients and Oscillations can be captured continuously or by trigger condition. Power values together with raw data allows to find anomalies immediately

FFT ANALYSIS
2D FFT, 3D FFT, Sideband Marker etc.

TRANSIENT RECORDING
Triggering on analogue, math or power channels.
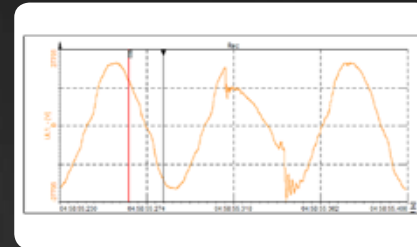
STANDARDS
The instruments comply to a list of international standards like IEC61000-4-30 and further more.

STATIC AND DYNAMIC TESTING
Our sophisticated Power calculation algorithms ensure amazing results during both static and dynamic recording conditions. Analysis of both low-speed wind turbine power (<10 Hz), up to high speed electric vehicle motors (<3000 Hz) is possible. Detailed analysis of period-based values is also included.
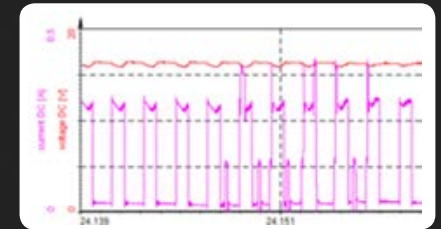
POST PROCESSING
Powerful analysis after measurement.

HARDWARE OVERVIEW

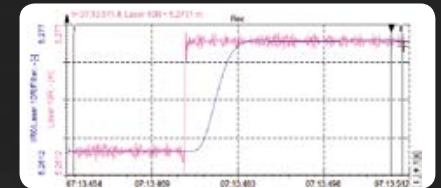| Low Voltage input	
ADC type	16 bit SAR with 100 kHz 5th order analog AAF filter or bypass
Sampling rate	Simultaneous 1 MS/s
Ranges	±100V, ±50V, ±20V, ±10V, ±5V, ±2V, ±1V, ± 500mV, ±200mV, ±100mV and 50mV
Input impedance (100 V range)	10 (1) MΩ between IN+ or In- and GND
Sensor Excitation	2 to 30 V bipolar / 0 to 24 V unipolar, sw programmable (16 bit DAC), max 0.2 A / 2 W
Overvoltage protection	Range < 10 V: 100V (200 V peak for 10msec); Range ≥ 10 V: 300 V cont.; 1000 V with banana plug
Connector	BNC, DSUB 9, Banana, Screw Connector
Accuracy (DC – 1kHz)	0.03% of reading & 0.02% of range

High Voltage input	
ADC type	16 bit
Sampling rate	Simultaneous 1 MS/s
Ranges	±1600 V, ±800 V, ±400 V, ±200 V, ±100 V, ±50 V, ±20 V
Input impedance	10 MΩ in parallel 2pF
Overvoltage protection	In+ to In-: 4 kVpk-pk , Inx to GND: 2 kVpk-pk , CAT II 1000V, CATIII 600V
Accuracy (DC – 1kHz)	0.03% of reading & 0.02% of range

R1DB/R2DB

Small size instrument with embedded computer, 12" display and batteries

SIRIUS MODULAR

Most flexible single distributable slices with USB and EtherCAT® interface

6

R8

Integrated instrument with 8 SIRIUS slices, powerful SBOX computer, optional 19" display (R8D) and batteries (R8DB) and real time EtherCAT® slave interface (R8rt)

R4

Integrated solution with 4 SIRIUS slices and powerful SBOX computer or USB hub in one unit with real time EtherCAT® slave interface

R3

Up to 3 SIRIUS slices in a rack mounted lab unit with standard easy-to-upgrade computer

ALL-IN-ONE

DATA FROM VARIOUS SOURCES CAN BE MEASURED COMPLETELY SYNCHRONOUS: ANALOG, DIGITAL, COUNTER, VEHICLE BUSES, VIDEO, ... AND MANY MORE. THIS ALLOWS BRINGING ALL DATA SOURCES TOGETHER. NO NEED OF MERGING DATA OF DIFFERENT SOURCES ANYMORE. HAVING ALL DATA IN ONE FILE OFFERS LIMITLESS TESTING POSSIBILITIES.
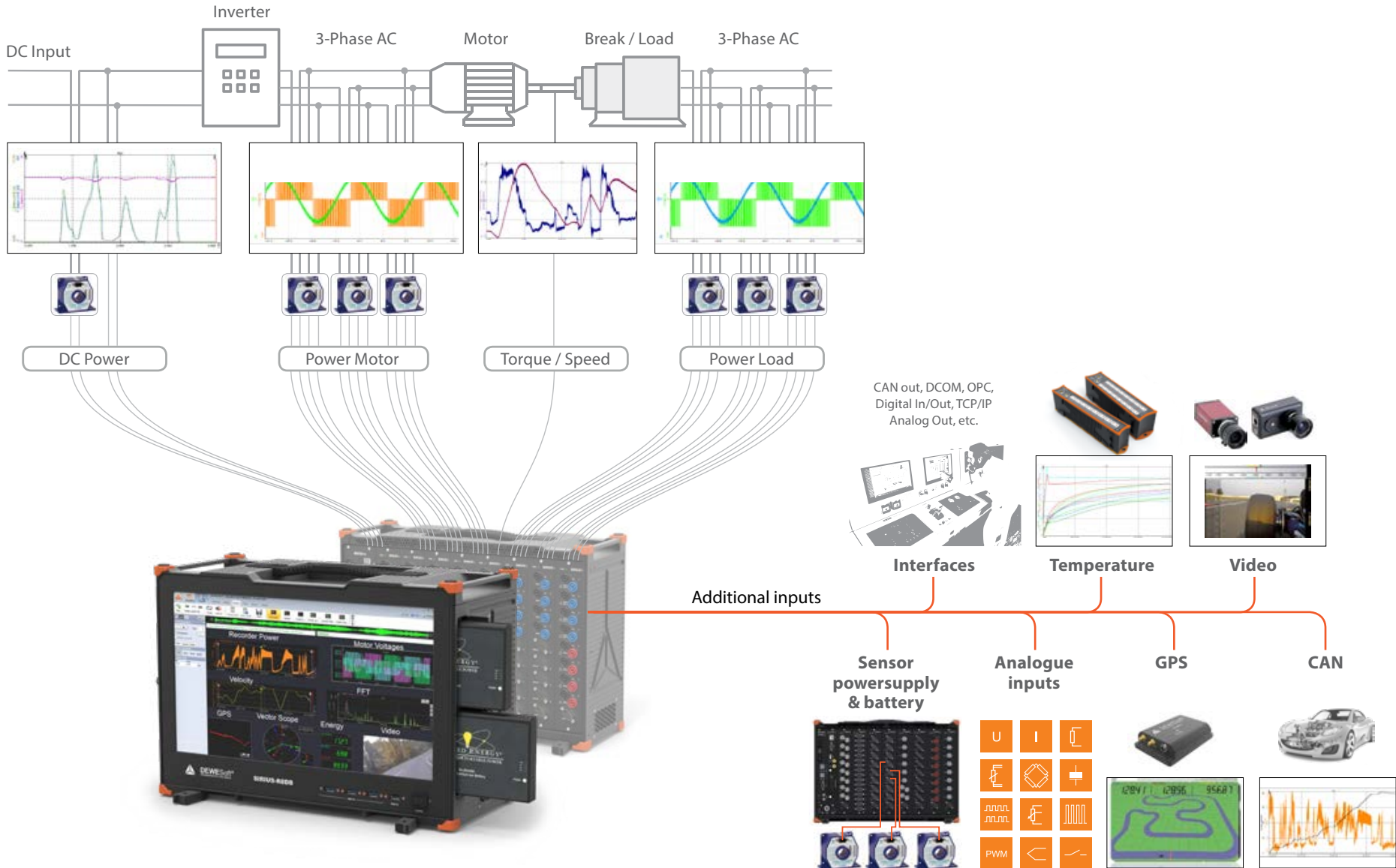
DISTRIBUTED

OUR UNIQUE SYSTEM ARCHITECTURE ALLOWS TO FULLY SYNCHRONIZE ANY KIND OF DEWESOFT DEVICE (SIRIUS, KRYPTON, DEWE43, ETC.)

Whether you synchronize them directly via synchronisation cable (up to 100m) or you need to synchronize measurement locations which are thousands of kilometers away from each other using GPS.
This allows for both, field tests and testbed operation, always the perfect measurement configuration and setup.

ELECTRIC VEHICLES
Measurement inside electric vehicles can be dangerous as high-voltage cable has to be guided to the measurement instrument.
Dewesoft architecture allows placing the measurement instrument exactly at the point where voltages and currents can be accessed ... synchronous and safe measurement!

TESTBED
Synchronisation at testbed operation allows placing the measurement system also inside the test chamber and just have the computer for data storing and analysis in the control chamber.

FIELD TEST
Wind Power - Measurement at Windpower plants often need synchronized measurements at the nacelle, at the transformer and other locations (e.g. windspeed).
Multiple Dewesoft instruments are placed at different locations but still fully synchronized measurements will be achieved. Furthermore from one PC you can view and analyse all data at the same time.

100 m

170 m

SIRIUSi-HS

SIRIUSi-HS
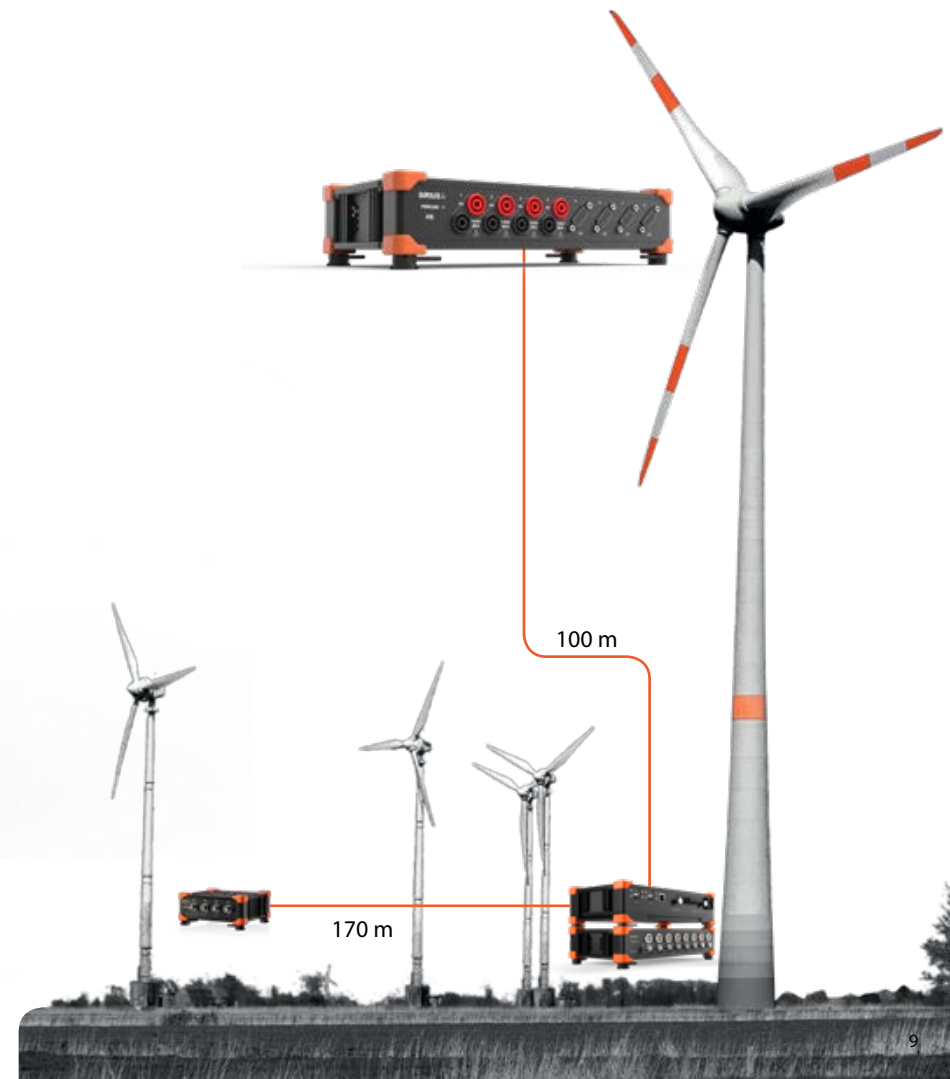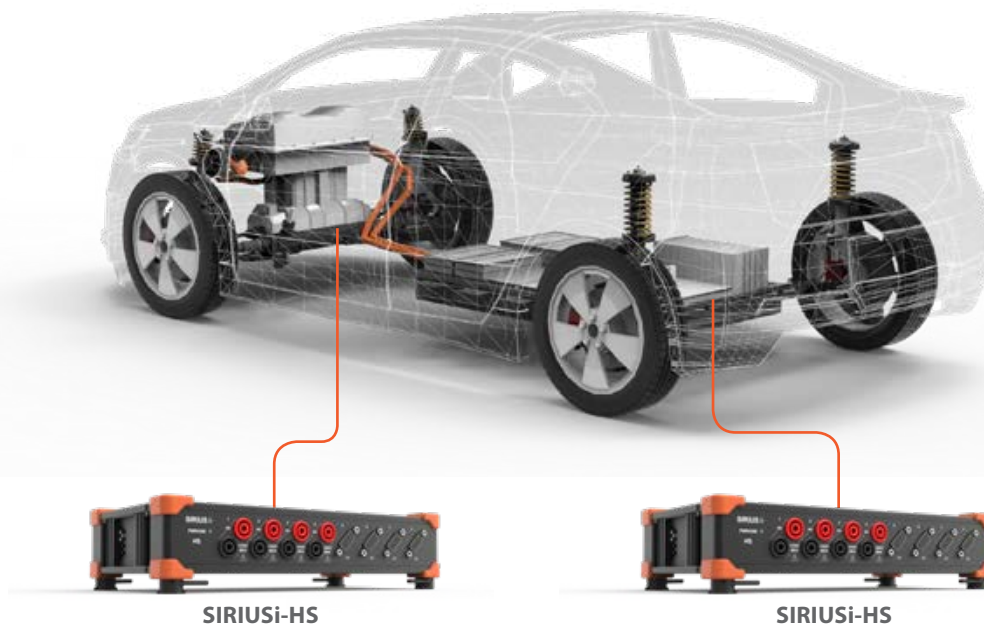
KRYPTON

CUSTOMIZED

KRYPTON ONE - for distributed measurements down to a single channel

We build the system exactly for your needs. You can decide on your own type of amplifier and connector. Get your customized signal inputs and individual number of measurement inputs.

RUGGED SYSTEMS
Ultra rugged and distributable data acquisition devices from -40 to +85° C operating range.

DISTIBUTED TO SINGLE CHANNEL
KRYPTON ONE allows distibuting DAQ units down to single channel.

RUGGED IP67
All KRYPTON modules are rugged with the IP67 degree of protection and ready for testing in extreme weather and harsh environments.

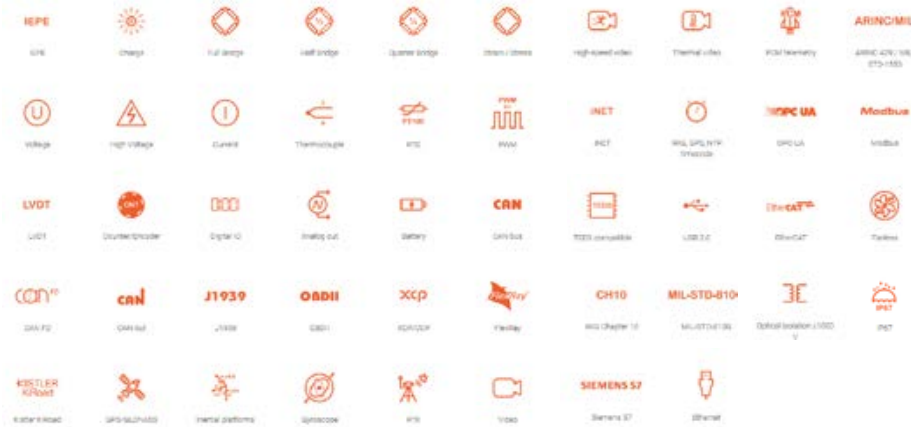## UP TO 40 kS/sec SAMPLING RATE
Most devices in the KRYPTON ONE product line can achieve sampling rate up to 40 kS/sec.

KRYPTON - for Temperature, Digital In & Out and Low speed signals

POWER ANALYZER

DEWESOFT POWER ANALYZER FEATURES A HIGH-SAMPLING RATE, HIGH-BANDWIDTH, AND HIGH-ACCURACY HARDWARE FOR POWER ANALYSIS ON ELECTRIC MOTORS, INVERTERS, TRANSFORMERS, SWITCHES AND ANY OTHER ELECTRONIC EQUIPMENT. THE ABILITY TO CONNECT OTHER SENSORS FOR TEMPERATURE, VIBRATION, RPM, TORQUE OFFERS A UNIQUE SOLUTION FOR MODERN POWER ANALYSIS SOLUTIONS.

PRECISION POWER ANALYSIS

But Dewesoft measurement instruments are also special because the high accurate input amplifiers. The basic accuracy from DC to 1 kHz is 0.03% (of reading). Especially for Power Analysis high-accurate amplifiers are absolutely necessary. The new high-speed amplifiers for high- and low voltage inputs reach new dimensions in accuracy. This amplifiers now have a basic accuracy from DC to 1 kHz of 0.03%

of reading (see orange line in chart). This is unique in Power Analyzer Market and especially at measurements with variable frequency drives absolutely necessary to reach highest-accurate measurement results. Other manufacturers often only have high accuracy at 50Hz/60Hz and the accuracy below and above is a lot worse (see chart grey line).
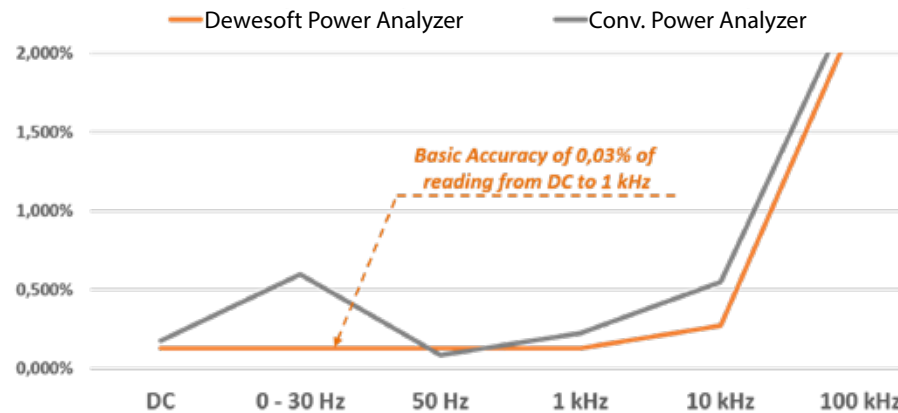

CURRENT SENSORS

We offer high-accuracy current sensors like zero-flux current transducers, AC/DC current clamps, Rogowski coils and shunts with the power supply out of the box.

POWER QUALITY ANALYZER

THE DEWESOFT SOLUTION CAN MEASURE ALL THE POWER QUALITY PARAMETERS ACCORDING TO IEC 61000-4-30 CLASS A. IN COMPARISON TO OTHER POWER QUALITY ANALYZERS IT'S POSSIBLE TO DO MORE DETAILED ANALYSIS (E.G. RAW DATA STORING, BEHAVIOR AT FAULTS, CALCULATION OF ADDITIONAL PARAMETERS ETC.).
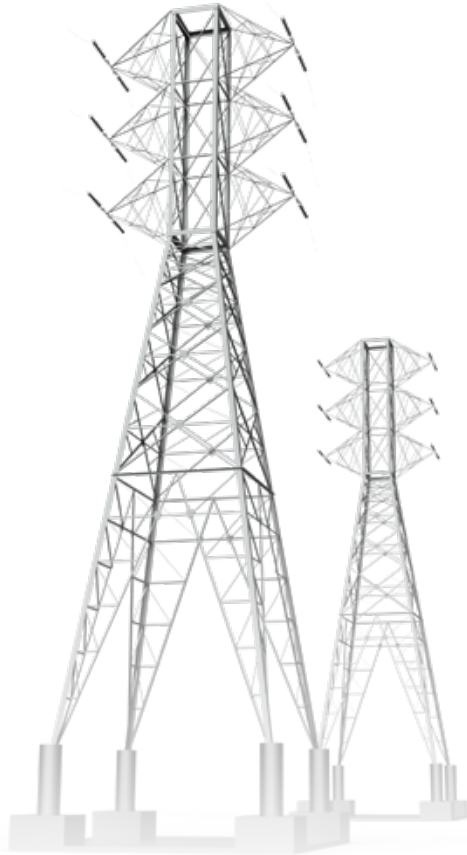
HARMONICS UP TO 150 kHz

Measure and analyze harmonics for voltage and current and THD with frequencies up to 150 kHz. All measurements are implemented according to international standards (e.g. IEC-61000-4-7). In addition to the RMS values of each harmonic also phase angle, active power, reactive power and the impedance are calculated.

SYMMETRICAL COMPONENTS

Calculation of postive, negative and zero sequence system for voltage, current as well as for active, reactive and apparent power.

THD CALCULATION

Calculation of THD (overall harmonic content) for voltage and current up to 3000th order.

INTERHARMONICS & HIGHER FREQUENCIES

Measure and analyze interharmonics and higher frequencies. The higher frequency parts can be grouped in 200 Hz bands and/or 2000Hz bands up to 150 kHz.

FLICKER, FLICKER EMISSIONS & RVCS

Automatic flicker and flicker emission parameters calculation according to IEC-61400-4-15 and IEC-61400-21 standards.

WIND & SOLAR TESTING

Scan for more information

THE POWER ANALYSIS MODULE ALLOWS COMPREHENSIVE TESTING OF RENEWABLE POWER GENERATION SOURCES LIKE WIND, SOLAR OR COMBINED HEAT AND POWER (CHP) UNITS. NO NEED FOR A SCOPE, POWER ANALYZER AND A POWER QUALITY ANALYZER ANYMORE - NOW YOU CAN PERFORM ALL OF THAT WITH A SINGLE INSTRUMENT.

POWER QUALITY ANALYSIS
Calculation of all required parameters like Harmonics, Interharmonics, Higher Frequencies, THD, Unbalance, Flicker coefficient, Flicker Emission and evaluation according to international standards (IEC61400-21, FGW-TR3, VDE AR4105, etc.)

POWER PERFORMANCE
High accurate Power Analysis for static & dynamic operation at any point (Rotor, Inverter, Grid). Evaluation of Reactive Power provision and power/frequency behaviour. Additional acquisition of wind speed allows Power Performance evaluation according to IEC61400-12.

BEHAVIOUR AT FAULTS
Using raw data for Low Voltage Ride Through (LVRT) analysis. Calculation of symmetrical components (Positive, Negative, Zero-Sequence) as Period Values and calculation of Half-Wave RMS values allows evaluaton of any kind of fault. All tests can be fully automated using the Sequencer function.

ELECTRICAL GRID AND POWER SYSTEM TESTING

THE DEWESOFT POWER ANALYZER IS USED IN A WIDE RANGE OF APPLICATIONS. ANY KIND OF ELECTRICAL EQUIPMENT CAN BE TESTED.

ELECTRICAL GRID
The typical application is Power Quality Analysis according to different standards and regulations. The system is also the perfect tool for troubleshooting. The combined functionalities of a Power Quality Analyzer, Scope and Raw Data Logger will find the root of any problem.

RAILWAY
Trains or Railways are operated either with DC or AC at different system frequencies (16.7Hz, 25Hz, 50Hz, 60Hz). Applications are Pantograph & Conductor Rail testing, Short Circuit tests, Interference Current Analysis, Power Quality and Power System testing.

AIRCRAFT
Aircraft are often operated at 400 Hz or 800 Hz and have in addition standard 50 Hz and DC systems. PQ Analysis with Harmonic Measurement up to 150 kHz according to ABD or EUROCAE standards, Fault and Transient Recording and Generator testing are a few of the applications.

MARINE
Electrical Power Systems of ships include electrical equipment like generators, motors, inverters and pumps, etc. which are operated at different voltage levels and frequencies. Testing and Troubleshooting of all the equipment as well as Power Quality Analysis are typical applications here.

ELECTRIC VEHICLE TESTING

Scan for more information

ADVANCED AND EASY TO USE SOLUTIONS FOR COMPLETE ELECTRIC AND HYBRID VEHICLE DEVELOPMENT, VALIDATION AND PRODUCTION. THE ELECTRIC MOTOR AND INVERTER TESTING, BATTERY AND BATTERY CHARGE TESTING, COMBUSTION ANALYSIS, HYDROGEN TESTING AND MORE.

HIGH ISOLATION
Specially designed amplifiers allow measuring of voltages, temperatures at high potentials of up to 1.6kV DC

MOTOR & INVERTER
Any kind of motor (1-12 phase AC) and any kind of inverter (DC-AC, AC-AC, switching frequencies up to some 100 kHz) are measured and analyzed with the power module.

DRIVETRAIN
Modular DAQ system allows measuring the power (AC or DC) at multiple points perfectly synchronized. This unique feature allows comprehensive analysis for all types of electric drivetrains: single motor, motor and generator, 2-4x in-wheel-motors.

CHARGING
Power Quality Analysis, Energy & Efficiency and Troubleshooting of EV Charging stations complement the features for EV testing.

WINTER & SUMMER TESTS
Wide operating temperature range of the instruments.

BATTERY
As the central element of the electrical powertrain, the battery requires extensive testing. For dynamic tests (Misuse tests, Overcharge, Short-Circuit etc.) the HS series with 1 MS/s is the perfect fit, while the flexible and scalable IOLITE and KRYPTON series is ideal for static tests (voltage, current, temperature, monitoring etc.).

FUNCTIONALITIES

POWER ANALYSIS

Functionality	Dewesoft Power Analyzer
Power Analysis for DC and AC	✓
Power Analysis	P, Q, S, PF, cos phi, D (Distortion), DH (Harmonic distortion), QH (reactive power of harmonics) (for each phase and total)
Fundamental Power	P_H1, Q_H1, S_H1, cos phi_H1, phi_H1 (for each phase and total)
Voltage and Current	RMS, RM, AVE (star and delta)
Energy Calculation	Total, positive and negative (e.g. Recuperation)
Efficiency	✓
Wiring Schematics	DC, 1-phase, 2-phase, 3-phase delta, 3-phase star, 3-phase V, 3-phase Aron, 6-phase (R2DB, R8D), 7-phase (R2DB, R8D, 12-phase (R8D))
Star-Delta Calculation	✓ (waveform and RMS values)
Frequencies	16.7 Hz, 25 Hz, 50 Hz, 60 Hz, 400 Hz, 800 Hz, Variable from 0.5 Hz up to 1.5 kHz
Frequency Source	Voltage, current, external
Period Values	U, I, P, Q, S, symmetrical components for ½, 1, 2 or 4 periods and selectable Overlap up to 99%
Number of Cycles for Power Calculation	5 - 12
Power Averaging	Selectable - starting from 1ms , Multiple Averaging (e.g. 20 ms, 60 s, 600 s) possible

POWER QUALITY

Functionality	Dewesoft Power Analyzer
Harmonics (according to IEC61000-4-7)	up to 150 kHz for voltage, current, active-, reactive power, phase angle and impedance
Variable Sidebands and Half Sidebands (according to IEC61000-4-7)	✓
Harmonic Smoothing Filter (according to IEC61000-4-7)	✓
Interharmonics (according to IEC61000-4-7)	✓
Total Harmonic Distortion (THD) (according to IEC61000-4-7)	Voltage and current (Total, odd and even) - selectable up to 150 kHz
Total Interharmonic Distortion (TIHD) and K-factor (according to IEC61000-4-7)	Voltage and current (Total, odd and even) - selectable up to 150 kHz

SOFTWARE FUNCTIONALITY

Functionality	Dewesoft Power Analyzer
Power Analysis	✓
Power Quality Analysis	✓
Database Storing	✓
Post Processing	✓
Math Library	✓
Data logging - Raw data storing	✓ (data Storing in Full Sampling rate of 1 MS/s per channel)
Scope	✓ (up to 8 graphs in one diagram, Zoom In- and Out)
Vector Scope	✓ (1-, 2-, 3-phase systems)
FFT	✓ (up to ½ of Sampling Rate)
Harmonic FFT	✓ (up to ¼ of Sampling Rate)
Transient Recording	✓ (up to 1 MS/s)
Triggering Channels	Analog, Digital, Counter, Math, Power, etc.
Triggering options	Simple edge (rising, falling), Window (two-levels: entering, leaving), Pulsewidth (longer or shorter than duration), Window and Pulsewidth, Slope Trigger (rising or falling slope with steepness)

Higher Frequencies (according to IEC61000-4-7)	up to 150 kHz (grouping in 200Hz bands)
Flicker (according to IEC61000-4-15)	selectable PST and PLT
Flicker Emission (according to IEC61400-21)	✓
Rapid Voltage Changes (according to IEC61000-4-15)	selectable steady state and hysteresis
Symmetrical Components (according to IEC61000-4-30)	Zero-, positive- & negative system for voltage and current (absolute or relative to fundamental)
Additional Symmetrical Components (according to IEC61400-21)	Active and reactive parts for zero-, positive- & negative system

SENSOR POWER SUPPLY

Most of the current sensors can get power supply directly out of the amplifier (HS-LV or LV) like Rogowski Coils, AC/DC Clamps, DSIi-adapters. For current sensors with high-power consumption like AC/DC fluxgate clamps or the zero-flux transducers there is an additional Power supply unit available, which can be fully integrated to All-In-One Instruments (R8D, R2D) or as external Sirius box. ... the most compact power supply solution on the market.

DIRECT CONNECTION TO THE AMPLIFIER (LV)

CONNECTION VIA SIRIUSi-PWR-MCTS2

SIRIUSi-PWR-MCTS2

SIRIUS-4xHS-HV, 4xHS-LV

DS-CLAMP-200DC

D9m-D9f-03M-CLAMP

SIRIUSi-PWR-MCTS

SIRIUS-PWR

IT-400S   D9m-D9f-5M-MCTS   D9m-D9f-03M-CLAMP

CLAMPS & TRANSDUCERS

INTERFACES & SENSORS

HIGH-ACCURACY SENSORS FOR AC/DC CURRENT MEASUREMENT AND POWER ANALYSIS. FROM CURRENT CLAMPS, HIGH-PRECISION ZERO FLUX CURRENT TRANSDUCERS, SHUNTS AND ROGOWSKI COILS.

UP TO 30 000 AMPS
Dwesoft offers a very wide range of current measurement ranges up to 30 000 (30 thousand) amps.

FLEXIBLE
There are more than 1000 different current sensors are available on market. If you want to connect your own or other sensors we are very happy to help you here. Dewesoft instruments allow connecting any type of current transducers.

-40°C TO +85°C
Dewesoft offers current transducers with wide temperature range ... ideal for winter testing (-40°C) or summer testing (+85°C).

INTEGRATED SENSOR POWER SUPPLY
Current clamps and zero-flux transducer can be powered straight from the DAQ instrument like R2DB, R8 or with external SIRIUS slice compatible chassis.

HIGH ACCURACY
Highly precise zero flux current transducers or fluxgate compensated clamps are a perfect fit for most demanding power measurements for E-mobility and inverter motors application.

AC/DC CURRENT MEASUREMENT
Dewesoft offers high-accuracy zero-flux current transducers, Rogowski coils, current clamps and shunts for AC and/or DC current measurement.

CURRENT TRANSDUCERS

	IT 60-S	IT 200-S	IT 400-S	IT 700-S	IT 1000-S	IN 1000-S	IT 2000-S
Primary Current Range DC, RMS Sinus	60 A	200 A	400 A	700 A	1000 A	1000 A	2000 A
Overload Ability Short Time (100 ms)	300 Apk	1000 Apk	2000 Apk	3500 Apk	4000 Apk	5000 Apk	10000 Apk
Max. burden resistor (100 % of Ip)	10 ohm	10 ohm	2.5 ohm	2.5 ohm	2.5 ohm	4 ohm	3.5 ohm
di/dt (accurately followed)	> 25 A/µs	> 100 A/µs	> 100 A/µs	> 100 A/µs	> 100 A/µs	> 100 A/µs	> 100 A/µs
Temperature influence	< 2.5 ppm/K	< 2 ppm/K	< 1 ppm/K	< 1 ppm/K	< 1 ppm/K	< 0.3 ppm/K	< 0.1 ppm/K
Output Ratio	100 mA at 60 A	200 mA at 200 A	200 mA at 400 A	400 mA at 700 A	1 A at 1000 A	666 mA at 1000 A	1 A at 2000 A
Bandwidth (0.5 % of Ip)	DC ... 800 kHz	DC ... 500 kHz	DC ... 500 kHz	DC ... 250 kHz	DC ... 500 kHz	DC ... 440 kHz	DC ... 140 kHz
Linearity	< 0.002 %	< 0.001 %	< 0.001 %	< 0.001 %	< 0.001 %	< 0.003 %	< 0.003 %
Offset	< 0.025 %	< 0.008 %	< 0.004 %	< 0.005 %	< 0.005 %	< 0.0012 %	< 0.0012 %
Frequency Influence	0.04 %/kHz	0.06 %/kHz	0.06 %/kHz	0.12 %/kHz	0.06 %/kHz	0.1 %/kHz	0.1 %/kHz
Angular Accuracy	< 0.025° + 0.06°/kHz	< 0.025° + 0.05°/kHz	< 0.025° + 0.09°/kHz	< 0.025° + 0.18°/kHz	< 0.025° + 0.09°/kHz	< 0.01° + 0.05°/kHz	< 0.01° + 0.075°/kHz
Rated isolation voltage rms, single isolation CAT III, polution deg. 2 IEC 61010-1 standards EN 50178 standards	2000 V 1000 V	2000 V 1000 V	2000 V 1000 V	1600 V 1000 V	300 V 300 V	1000 V -	1000 V -
Test voltage 50/60 Hz, 1 min	5.4 kV	5.4 kV	5.4 kV	4.6 kV	3.1 kV	4.2 kV	6 kV
Inner diameter	26 mm	26 mm	26 mm	30 mm	30 mm	38 mm	70 mm
Dewesoft Shunt	5 ohm	5 ohm	2 ohm	2 ohm	1 ohm	1 ohm	1 ohm

CURRENT CLAMPS AC/DC

INTERFACES & SENSORS

	DS-CLAMP-200DC	DS-CLAMP-500DC	DS-CLAMP-500DCS	DS-CLAMP-1000DC	DS-CLAMP-150DC	DS-CLAMP-150DCS	DS-CLAMP-1800DC
Type	Flux Gate sensor	Flux Gate sensor	Flux Gate sensor	Flux Gate sensor	Hall sensor	Hall sensor	Hall sensor
Range	200 ADC or AC rms	500 ADC or AC rms	500 ADC or AC rms	1000 ADC or AC rms	150 A rms / 300 A peak	150 A rms / 300 A peak	1800 ADC or AC rms
Bandwidth	DC to 500 kHz	DC to 100 kHz	DC to 200 kHz	DC to 20 kHz	DC to 100 kHz	DC to 100 kHz	DC to 20 kHz
Accuracy	0.3 % of reading	0.3 % of reading	0.3 % of reading	0.3 % of reading	1 % + 2 mA	1 % + 2 mA	2.5 % +/- 0.5A
Phase	≤ 0.1 ° (up to 100 Hz)	≤ 0.1 ° (up to 100 Hz)	≤ 0.1 ° (up to 100 Hz)	≤ 0.1 ° (up to 100 Hz)	-	-	-
TEDS	Fully supported	Fully supported	Fully supported	Fully supported	Fully supported	Fully supported	Fully supported
Sensitivity	10 mV/A	4 mV/A	4 mV/A	2 mV/A	20 mV/A	20 mV/A	1 mV/A
Resolution	±1 mA	±1 mA	±1 mA	±1 mA	±1 mA	±1 mA	±200 mA
Overload Capability	500 A (1min)	1000 A DC	720 A DC	1700 A DC	500 A DC (1min)	500 A DC (1min)	2000 A DC (1min)
Dimensions (Ø opening)	153 x 67 x 25 mm (Ø 20 mm)	238 × 116 × 35 mm (Ø 50 mm)	153 x 67 x 25 mm (Ø 20 mm)	238 x 114 x 35 mm (Ø 50 mm)	205 x 60 x 15 mm ((Ø 32 mm)	106 x 100 x 25 mm ((Ø 25 mm)	205 x 60 x 15 mm (Ø 32 mm)

CURRENT CLAMPS AC / ROGOWSKI COILS AC

	DS-CLAMP-5AC	DS-CLAMP-15AC	DS-CLAMP-200AC	DS-CLAMP-1000AC
Type	Iron-Core	Iron-Core	Iron-Core	Iron-Core
Range	5 A	15 A	200 A	1000 A
Bandwidth	5 kHz	10 kHz	10 kHz	10 kHz
Accuracy	1 - 12 A: ± 0,5 % of readng 0.5 - 1 A: ± 1 % of reading 5 mA - 0,5 A: ± 2 % of reading	1% for currents of 1 - 15 A 2.5% for currents < 1 A	1% for currents of 100 - 240 A 2,5% for currents of 10 - 100 A 3,5% for currents of 0,5 - 10 A	0,3% for currents of 100A - 1200 A 0,5% for currents of 10A - 100 A 2 % for currents < 1A
Phase	1 - 12 A: ± 1 ° 0.5 - 1 A: ± 1 ° 5 mA - 0.5 A: ± 2 °	≤ 3° for currents of 1 - 15 A ≤ 5° for currents < 1 A	≤ 2,5° for currents of 100 - 240 A ≤ 5° for currents of 10 - 100 A not specified for currents of 0,5 - 10 A	0,7° for currents of 100A - 1200 A 1° for currents of 10A - 100 A not specified for currents of < 1A
TEDS	Fully Supported	Fully Supported	Fully Supported	Fully Supported
Sensitivity	100 mV/A	100 mV/A	10 mV/A	1 mV/A
Resolution	-	0.01 A	0.5 A	0.001 A
Overload Capability	-	Crest Factor of 3	Crest Factor of 3	1200 A for 40 minutes
Dimensions (Clamp opening)	102 x 34 x 24 mm (Ø 15mm)	135 x 51 x 30 mm (Ø 22mm)	135 x 51 x 30 mm (Ø 22mm)	216 x 111 x 45 mm (Ø 53mm)

	DS-Flex-300-17-HS	DS-Flex-3000-35	DS-Flex-3000-80	DS-Flex-30000-120
Type	Rogowski coil	Rogowski coil	Rogowski coil	Rogowski coil
Range	300 A	3 A, 30 A, 300 A, 3000 A	3 A, 30 A, 300 A, 3000 A	30 A, 300 A, 3000 A, 30000 A
Bandwidth	5 Hz to 1 MHz	10 Hz to 20 kHz	10 Hz to 20 kHz	10 Hz to 20 kHz
Accuracy	1.5 %	1.5 %	1.5 %	1.5 %
Coil Length	170 mm (Ø 45 mm)	350 mm (Ø 100 mm)	800 mm (Ø 250 mm)	1200 mm (Ø 380 mm)
TEDS	Fully supported	not supported	not supported	not supported

Weitere Stromwandler für AC-/DC-Messungen zwischen 300mA und 4000 mA auf Anfrage.

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