DEWESoft®

HARDWARE

SIRIUS® XHS

PRODUCT DATA-SHEET

SIRIUS® XHS V23-1

HIGH-BANDWIDTH, HIGH-DYNAMIC, HIGH-SPEED - ONE DEVICE.

V23-1

7 YEAR WARRANTY

DEWESoft®

NEW WORLD OF APPLICATIONS

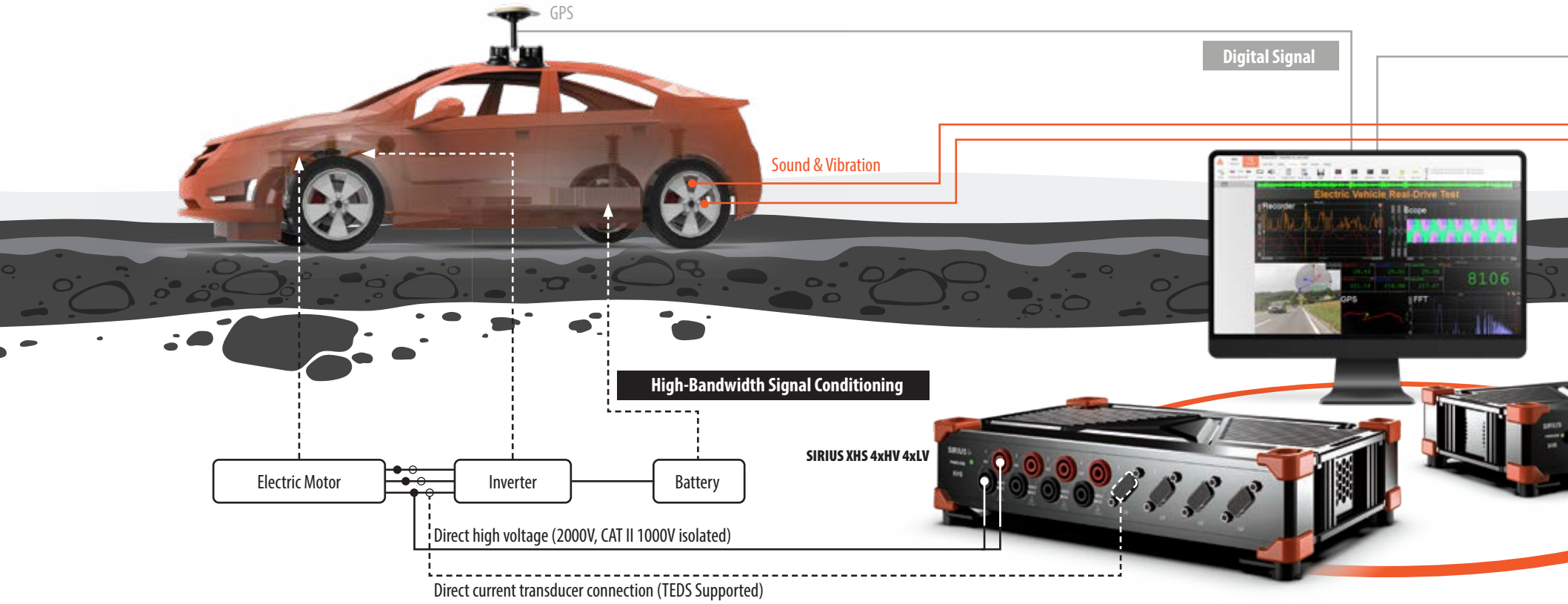
POWER ANALYSIS

The SIRIUS XHS is the perfect next-gen power analyzer and power quality analyzer device with the highest measurement accuracy.

DewesoftX data acquisition software will automatically calculate and store not only raw data from the voltage and current transducers but also all the power parameters: P, Q, S, Cos φ, power factor, P, Q, cos φ for each harmonic and other relevant power parameters.

Using the high computational performance capability from the computer's GPU, the DewesoftX Power Module can calculate all the power parameters at full speed up to 15 MS/s sampling rate per channel.

The special SIRIUS XHS-PWR DAQ device is specifically designed for in-vehicle electric power measurements. It features an integrated patented DC-CT current transducer that allows very precise current measurements even in the most demanding applications such as very high current peaks or leakage current measurement.

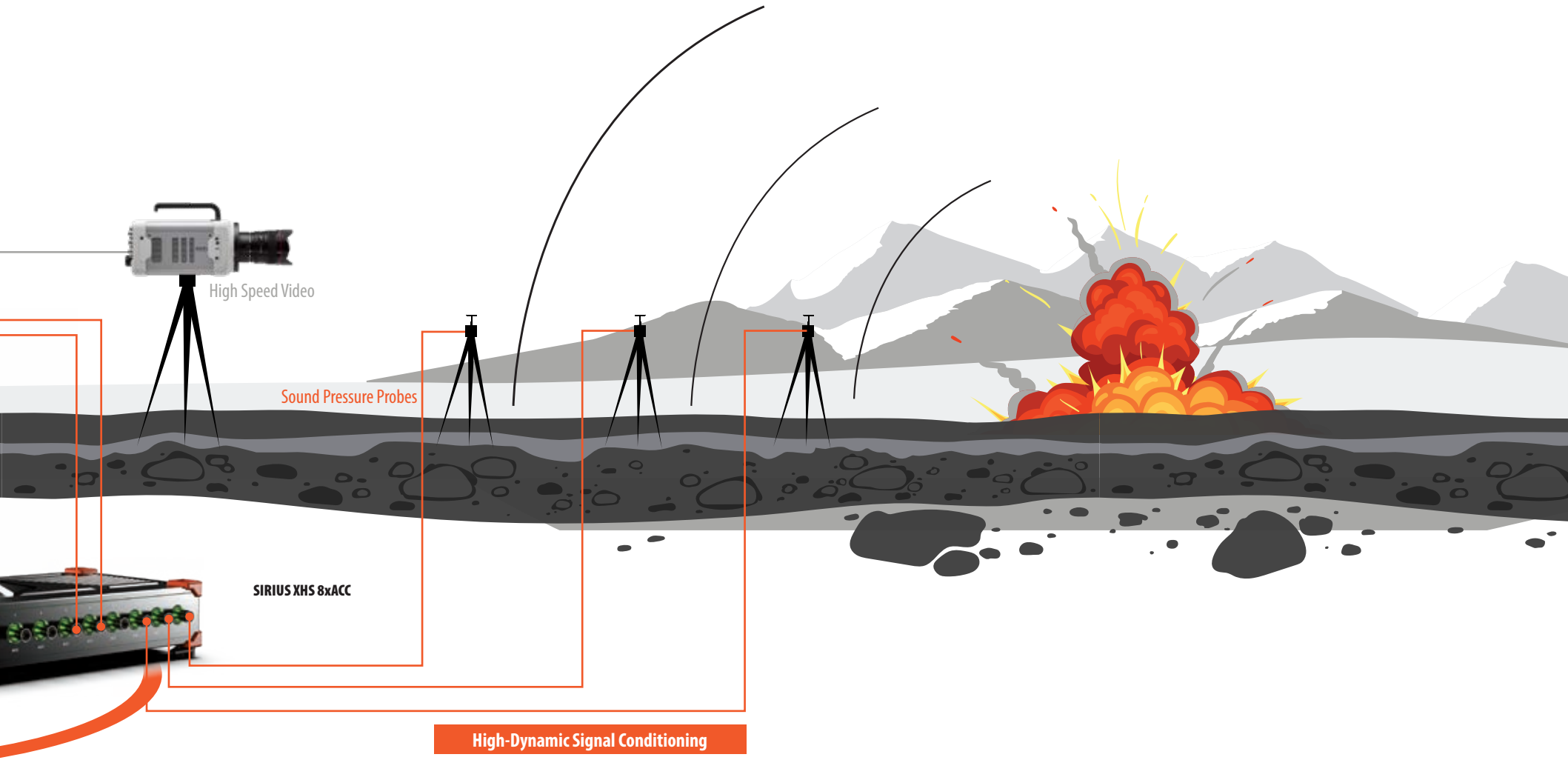


TRANSIENT RECORDING

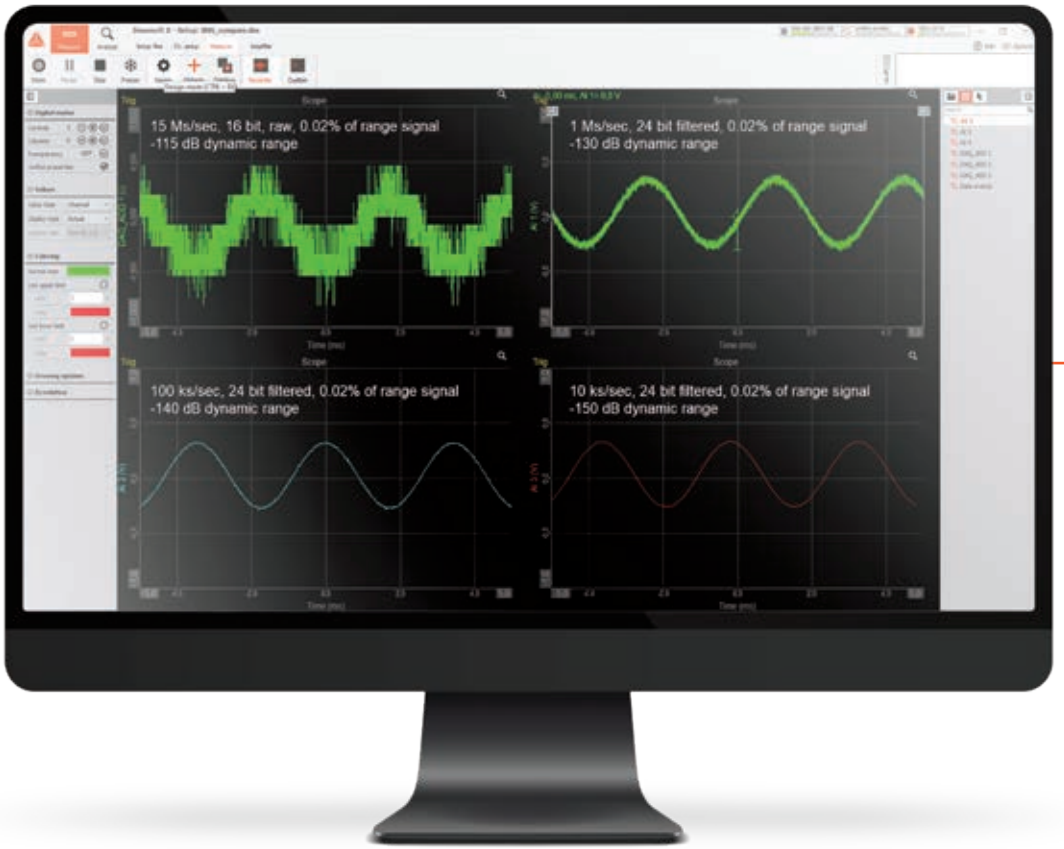
The ability to record transients with advanced triggering capabilities and a high analog bandwidth ensures that the high-speed transients from voltage, current and pressure probe sensors.

HIGH SPEED DATA RECORDING

With improved performance the DewesoftX software allows for full range data storage. The DewesoftX software is designed to enable GPU computation, this ensures that sampling can be done at full speed (15 MS/s) with no noticeable performance loss on the PC.



TECHNOLOGY AND KEY FEATURES



HYBRID ADC TECHNOLOGY

Hybrid ADC offers everything you ever wanted out of a high-end data acquisition system. High bandwidth and high dynamic mode available software selectable per channel.

HIGH BANDWIDTH MODE

This mode offers more than 5 MHz bandwidth and 15 MS/s sampling rate, SIRIUS XHS can perfectly acquire impulse, step, and square signals without any ringing or overshoot. Such an acquisition mode is perfect for transient recording and power analysis - and is usually found in SAR ADCs.

ALIAS FREE MODE

Lets you acquire up to **2 MS/s** with an extremely high dynamic range, similar to that of our **SIRIUS DualCoreADC** devices. The data is totally alias-free, so all higher frequencies are fully rejected. This is perfect for sound, vibration and general data recording applications. Such operation is typically found in Sigma-Delta ADCs.

By today's standard, you would need two totally separate data acquisition devices for the mentioned measurements and applications. But the new SIRIUS XHS data acquisition system allows you to select per channel, depending on the measurement application, the appropriate mode of data acquisition.

HIGH GALVANIC ISOLATION

High channel-to-channel and channel-to-ground isolation prevents damage to the systems from excessive voltage and avoids ground loops.

SIRIUS XHS is the first device ever with Hybrid ADC technology capable of doing both high bandwidth transient recording and very high dynamic alias free acquisition - software-selectable per channel. Modern interfaces and protocols gives you open and flexible connectivity.

VARIETY OF AMPLIFIERS

High voltage amplifiers that can measure 2 kV peak directly. Low voltage amplifiers for connecting almost any current sensor. ACC amplifiers for connecting high speed accelerometers and pressure sensors. The range of amplifiers available in the XHS range will grow in the future and will also include charge and strain gauge amplifier.

SIRIUS XHS HAS TWO WAYS OF TRANSMITTING DATA TO THE PC:

Ethernet interface (GLAN RJ45)
is intended for distributed data acquisition

USB 3.0 (type C connector)
is intended for very high-speed transmission.

The system is acquiring the data with a very low CPU load. We are using DMA transfer on the system level to reduce loads. In today's world of open tool chain and intercommunication, devices should be compliant with standard protocols. SIRIUS XHS can serve acquired data via these standard protocols, all in parallel.

Data via XCP to:
ECU calibration software like ETAS INCA or Vector CANape

XCP
starting with version 1.4, XCP became a very powerful interface protocol for data exchange in the automotive industry. In the modern age of e-mobility, the required sampling rates are much higher than ever and 1 Gbit XCP interface allows for data transfers up to 1 MS/s.

in parallel

Data via OPC UA to:
Dewesoft X
Time-series DB, Cloud, SCADA

OPC UA
is the industry standard. Actually, it is more than a standard, it is a perfect framework to describe and set up a device in any system, including SCADA, MES, ERP, mobile devices, and others.

USB 3.0 (type C) or
Ethernet (1 Gbit GLAN RJ45)

SMALLEST FORM FACTOR

With the standard SIRIUS sized chassis you can easily carry the SIRIUS XHS in your backpack along with your laptop for field measurements.

PERFECT SYNCHRONIZATION

Even though you can select some channels to be high bandwidth and some to be alias free, filtering is made in the way that all signals are perfectly time aligned with zero phase shift.

SOFTWARE INCLUDED WITH FREE LIFETIME UPGRADES

Data acquisition systems come bundled with DewesoftX data acquisition software - including lifetime free software updates and technical support.

SIRIUS XHS SPECS

SIRIUS XHS data acquisition systems come with high galvanic channel-to-channel and channel-to-ground isolation (up to CATII 1000V), and even includes isolated sensor excitation.

SIRIUS XHS HV

Highly isolated CATII 1000 V input. It can directly measure from 200 V to 2000 V peak range at >5 MHz bandwidth with down to 0.03 % accuracy. This amplifier is perfect for connecting high voltage signals directly.

SIRIUS XHS LV

Highly isolated voltage input. It can directly measure from 0.05 V to 100 V range at >5 MHz bandwidth, with down to 0.03 % accuracy, and sensor excitation. This amplifier is perfect for a direct connection of low voltage signals and current transducers.

SIRIUS XHS ACC

With very high bandwidth this amplifier can acquire data from pressure probes, accelerometers and microphones with very high dynamic and very high bandwidth.

SYSTEM SPECS	
Power	
Power Supply	9 - 48 V DC
Power consumption	Typ. 30 W
Environmental	
Operating Temperature	-10 to 50 °C
Storage Temperature	-40 to 85 °C
Humidity	5 to 95 % RH non condensing @ 60 °C
IP rating	IP20
Shock & Vibration	Shock (EN 60068-2-27:2009) 75 g, 6 ms, half-sine (25x pos./neg in each ahis) Random Vibration (EN 60721-3-2: 1997 - Class 2M2) Sweep sinus Vibration (EN 60068-2-6:2008)
Interfaces	
Ethernet	1 GbE (XCP, OPC UA) incl. IEEE1588v2 synchronization (PTP) (RJ45)
USB	USB 3.0 (Type C)
CAN	CAN 2.0 (DSUB9)
Sync Input/Ouput	
Level (Input/Output)	TTL compatible
Max. Output Current	±24 mA (±50 mA for 1 sec)
Max. Sync-cable length	100 m (Master/Slave), 200 m (IRIG)

	XHS-HV	XHS-LV	XHS-ACC
Connectors	BANANA	DB9, BNC	BNC
Channels per slice	8	8	8
Data rate / channel	15 MS/s	15 MS/s	15 MS/s
ADC type	Hybrid ADC - alias free up to 2 MS/s, 16-bit up to 15 MS/s		
Bandwidth	5 MHz	5 MHz	5 MHz
Voltage ranges	±2000 V ... ±200 V	±100 V ... ±50 mV	±10 V ... ±200 mV
Input coupling	DC	DC, AC 1 Hz	DC, AC 0.1 Hz, AC 1 Hz
Sensor excitation	-	2.5..30 V bipolar, 2..24 V unipolar, max. 0.2 A / 2 W	IEPE 2 mA, 4 mA, 8 mA, 12 mA, 16 mA, 20 mA
Bridge connection	-	-	-
IEPE input	-	DSI-ACC	✓
Temperature (PTx)	-	DSI-RTD	-
Thermocouple	-	DSI-TH	-
LVDT	-	DSI-LVDT	-
Charge	-	DSI-CHG	-
Current	-	ext. shunt DSI20mA, DSI5A	ext. shunt
TEDS	-	✓	✓
Isolation voltage	CATII 1000 V	1000 V	1000 V
Power consumption per channel	1 W/ch	1.2 W/ch	1.3 W/ch
Advanced functions	High voltage, high bandwidth, high isolation	High sensor excitation and multi range	Sensor error detection, high speed

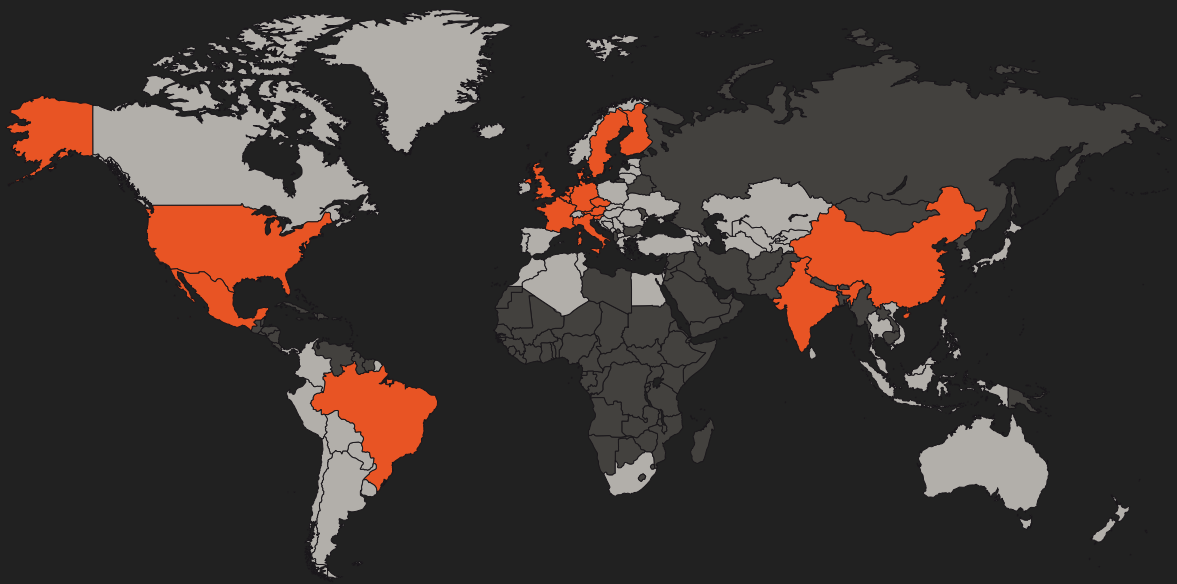
SIRIUS XHS-PWR SPECS

System specifications	SIRIUSi-XHS-PWR-1xHV-1xDC-CT-1000A-UNI				
Input types	Voltage, Current (single phase)				
ADC Type	Hybrid ADC - alias free up to 2 MS/s, 16-bit up to 15 MS/s				
Sampling Rate	Simultaneous 15 MS/s				
Filtering	AAF 1 MHz (6th order)				
Voltage Mode	**±2000 V, ±1000 V, ±400 V, ±200 V**				
Analog bandwidth (-3 dB)	5 MHz				
Working voltage (continuous)	1000 VDC or 1000 VAC				
Measuring voltage (max.)	±2000 V				
Input Accuracy DC	±0.03 % of reading ±0.02 % of range				
Input Coupling	DC				
Input Impedance	10 MΩ || 1 pF				
Current Mode	**±2000 A, ±1000 A, ±400 A, ±200 A**				
Analogue bandwidth (-3 dB)	> 500 kHz				
Working current (continuous)	±1000 ADC				
Measuring current	±2000 ADC				
Primary / Secondary Ratio	1 : 1680				
Input Accuracy (Ip @ 10 Arms)	±0.1 % of reading ±50 ppm of range ±0.05 A				
HV harness	**120 mm2**	**95 mm2**	**70 mm2**	**50 mm2**	**35 mm2**
Rated DC current	344 A	292 A	245 A	198 A	158 A
Cable gland	M32	M32	M32	M25	M25
General specifications					
Power					
Power Supply	9 - 48 V DC PWR + DATA + SYNC (Lemo 1T 8-pin)				
Power consumption	Typ. 13 W (Max. 23 W)				
Environmental					
Operating Temperature	-20 °C to 70 °C				
IP rating	IP67				
Interfaces					
Ethernet	GbE (XCP, OPC UA) incl. IEEE1588v2 synchronization (PTP) (LEMO 1T 8-pin)				
CAN	CAN 2.0 (DSUB-9)				
Additional Specifications					
Grounding	M6 insert				
Dimensions	245 x 151 x 63 mm				
Weight (incl. cables and connectors)	4.4 kg (max. 7 kg)				

SIRIUS XHS-PWR

Integrated DC-CT current transducer ensures a very precise current measurement. It's the latest current sensing technology with 250 A and 1000 A ranges, 500 kHz bandwidth, and the ultimate performance: excellent linearity, precision, accuracy, immunity to external magnetic fields, low offsets, and extremely low-temperature drift at low power consumption.

Comparison table of DC-CT versus other current sensor types:								
	Type	Isolated	Range	Bandwidth	Linearity	Accuracy	Temp. drift	Consumption
DC-CT	DC/AC	Yes	High	High	Excellent	Very High	Very Low	Medium
Fluxgate	DC/AC	Yes	High	High	Excellent	Excellent	Low	High
Hall	DC/AC	Yes	High	Medium	Medium	Medium	High	Low-Med
Shunt	DC/AC	No	Medium	Medium	Good	High	Medium	High
Rogowsky	AC	Yes	High	High	Good	Medium	Low	Low
CT	AC	Yes	High	Medium	Medium	Medium	Low	Low



DEWESOFT® WORLDWIDE: SLOVENIA, Austria, Belgium, Brazil, Czech, China, Denmark, Finland, France, Germany, Hong Kong, India, Italy, Mexico, Singapore, Sweden, UK, USA and PARTNERS IN MORE THAN 50 COUNTRIES

HEADQUARTERS
DEWESOFT SLOVENIA
Gabrsko 11A, 1420 Trbovlje, Slovenia
+386 356 25 300

www.dewesoft.com
support@dewesoft.com
sales@dewesoft.com