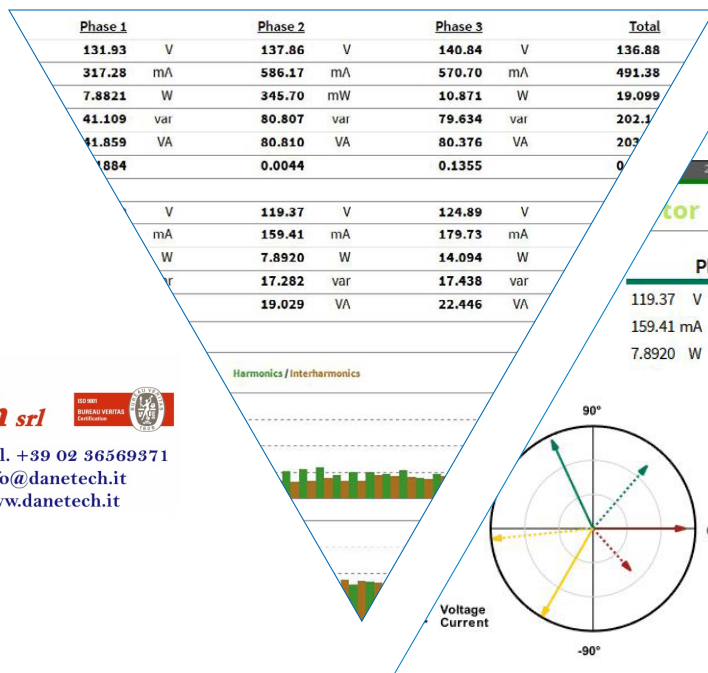




DEWETRON



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HIGH-PRECISION POWER ANALYZER



POWER ANALYSIS

Build the power analyzer you need with our dedicated power modules.
The perfect power analyzer for every field of application.

- > Modular high-precision tailored power analyzer
- > Acquisition of additional inputs such as counter, IEPE, thermocouple, CAN, GPS, video, SCPI, etc.
- > Up to 16 power phases (16 x U + 16 x I), expandable
- > Redundant, integrated current transducer supply
- > Various test bed integration possibilities
- > Remote configuration and control

EVERY DEWETRON
SYSTEM CAN BE A
POWER ANALYZER

0.03 %
Measurement
error

10 MS
per second/
per channel

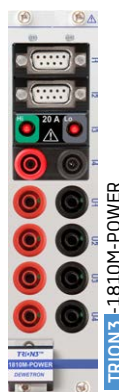
>16
Power phases
expandable



POWER MODULES

Enjoy maximum flexibility with user-exchangeable plug & play power modules: Choose your suitable power modules, plug them into your DEWE3 DAQ system, turn the system on and get to work. Select between different power modules of the TRION3 and TRION series for 4-phase power analysis and up to 10 MS/s sampling rate.

Because of the unique modularity, 4 slots on each power module (8 slots of the TRION3-1810-SUB-8) can be equipped with different sub-modules (direct current measurement modules or voltage modules) to connect almost any kind of current or voltage transducer.



POWER MODULES	CHANNELS	SAMPLE RATE PER CHANNEL	RESOLUTION	ISOLATION	CONNECTOR TYPES
TRION3-1810M-POWER ^{1) 2)}	8 (4 U / 4 I)	10 MS/s	24-bit	Yes	Safety banana, 4 exchangeable sub-modules
TRION3-1820-POWER ^{1) 2)}	8 (4 U / 4 I)	2 MS/s	24-bit	Yes	Safety banana, 4 exchangeable sub-modules
TRION-1820-POWER ²⁾	8 (4 U / 4 I)	2 MS/s	24-bit	Yes	Safety banana, 4 exchangeable sub-modules
TRION-1810-HV ²⁾	8 (4U / 4I)	1 MS/s	24-bit	Yes	Safety banana, 4 exchangeable sub-modules
TRION3-1810-SUB-8 ^{1) 2)}	8	1 MS/s	18-bit	Yes	8 exchangeable sub-modules

¹⁾ All TRION3 modules require a DEWE3 express chassis. ²⁾ These modules occupy 2 TRION slots.

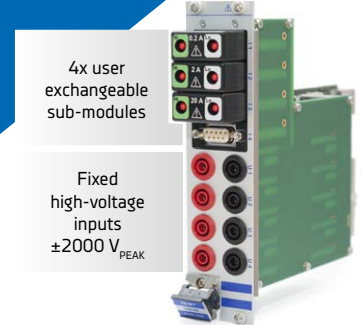
CREATE INDIVIDUAL INPUT CONFIGURATIONS

We offer you a unique modularity: 4 slots on each power module or even 8 slots of the TRION3-1810-SUB-8 can be equipped with different sub-modules. Choose between direct current measurement modules or voltage modules to connect almost any kind of current or voltage transducer.

Create your individual input configurations with our sub-modules. They are user-exchangeable at any time and automatically detected. The calibration data is directly stored inside the sub-module.



TRION3-1810-SUB-8



TRION(3)-18xx-POWER

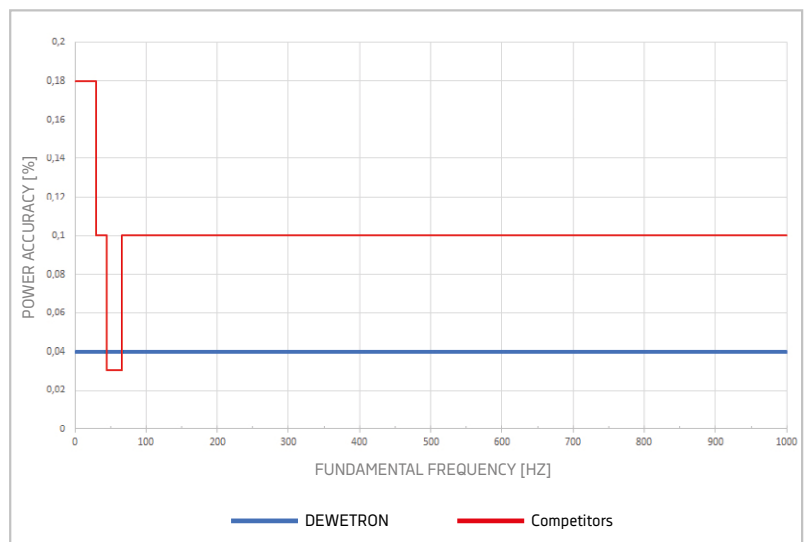
SUB-MODULE		RANGE	SAFETY	BANDWIDTH	CONNECTOR	USER-EXCHANGEABLE
VOLTAGE	1 V module	1 V _{RMS} (±2 V _{PEAK})	Not isolated. Depending on connected clamp	5 MHz	D-SUB-9 socket	Yes
	5 V module	5 V _{RMS} (±10 V _{PEAK})		5 MHz	D-SUB-9 socket	
				150 kHz	D-SUB-9 socket	
	600 V module	600 V _{RMS} (±1500 V _{PEAK})	CAT II 600 V, isolated	300 kHz	Safety banana	
	5 V module	5 V _{RMS} (±10 V _{PEAK})		300 kHz	Safety banana	
XV module	600 V _{RMS} (±1000 V _{PEAK}) 60 V _{RMS} (±100 V _{PEAK}) 6 V _{RMS} (±10 V _{PEAK}) 0.6 V _{RMS} (±1 V _{PEAK})	300 kHz		Safety banana		
CURRENT	20 A module	20 A _{RMS} (±40 A _{PEAK})	CAT II 600 V, unfused	300 kHz	Safety banana (male)	
	2 A module	2 A _{RMS} (±4 A _{PEAK})				
	1 A module	1 A _{RMS} (±2 A _{PEAK})				
	0.2 A module	0.2 A _{RMS} (±0.4 A _{PEAK})				

FIXED HIGH-VOLTAGE INPUTS		RANGE	SAFETY	BANDWIDTH	CONNECTOR	USER-EXCHANGEABLE
Voltage input U1, U2, U3, U4	1000 V _{RMS} (±2000 V _{PEAK})	CAT IV 600 V / CAT III 1000 V	5 MHz	Safety banana	No	

HIGH DYNAMIC RANGE

DEWETRON's power modules provide fast acquisition rates up to 10 MS/s and 18-bit A/D conversion as well as the best linearity of the signal conditioning. In addition, the power modules offer the highest dynamic performance in the whole input range: up to 1000 V (±2000 V_{PEAK}) and 20 A (±40 A_{PEAK}) with the highest possible accuracy for all your dynamic applications.

The power accuracy of the DEWETRON power analyzer is stunning. Compared to other power analyzers available on the market, DEWETRON offers a constant power accuracy of 0.04 % from 0.5 Hz to 1000 Hz fundamental frequency. This is the key requirement for test bed applications to achieve high-precision results over a wide frequency range.

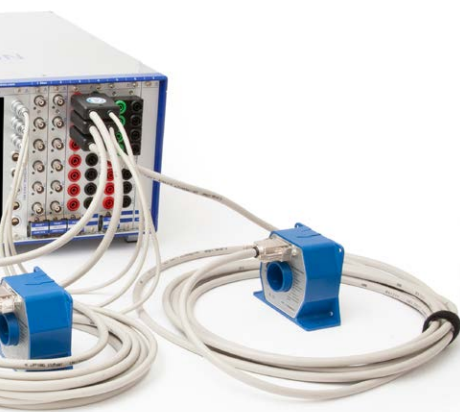


CURRENT TRANSDUCERS & CLAMPS

DEWETRON offers several solutions for current measurement from simple shunts to current clamps and high-precision zero flux transducers. There are versions for pure AC current which do not need any power supply and versions for DC and AC current which can be supplied from the DEWETRON instrument.



	DIRECT INPUT TRION-POWER-SUB				ZERO-FLUX THROUGH HOLE						CLAMPS				FLEXIBLE	
Name	TRION-POWER-SUB-CUR-x				CT-100	CT-200	CT-400	CT-500	CT-1000	CT-2000	CT684xA				SE-CUR-LFR-x	
Range [A_{RMS}]	0.2	1	2	20	100	200	400	500	1000	2000	20	200	500	1000	4200	42000
Accuracy [%]	<0.05				<0.03						<0.5				<2.0	
Bandwidth [kHz]	300				2000	1100	800	520	440	140	1000	500	200	20	600	
AC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Diameter [mm]	-	-	-	-	28	28	28	38	38	70	20	20	20	50	85	210
External supply required	No				Yes, provided by DEWE3-PA8											
Sub-module recommendation	-				SUB-CUR-02A			SUB-CUR-1A or SUB-dLV-1V with shunt adapter (for highest bandwidth)			SUB-dLV-5V for high bandwidth or SUB-dLV (clamp input) for medium bandwidth					
Application	Accurate measurements of low current, where current path can be opened.				Accurate measurements of high current, where current path can be opened. Typically efficiency tests, R&D...						Measurements of high current, where current path cannot be opened. Typically e-mobility.				High AC current measurements, where current path cannot be opened. Typ. steel industry, melting oven...	



INTEGRATED TRANSDUCER POWER SUPPLY

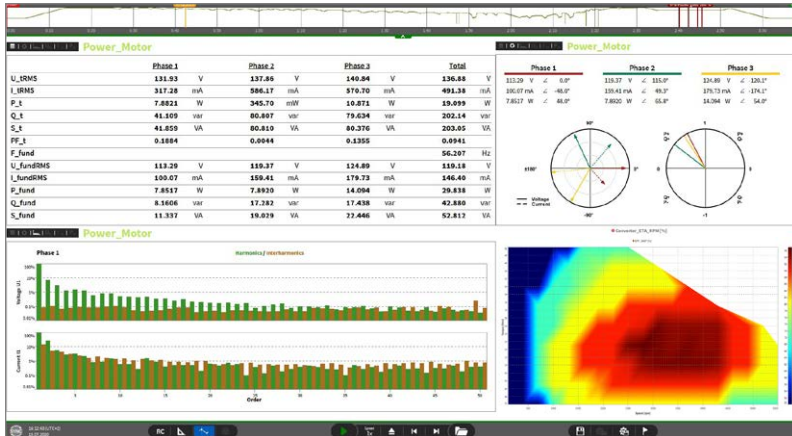
The integrated, redundant transducer power supply enables you to relinquish an additional supply box and connect the transducers directly to the power analyzer. Sensors requiring ± 15 V or +9 V supply voltage can be powered directly. Therefore, sensors such as zero-flux transducers do not need an extra power supply.

TRANSDUCER SUPPLY BOX

For some data acquisition systems, we offer a current transducer box to power up to 8 current transducers directly from your DEWETRON DAQ system.

OXYGEN SOFTWARE FOR POWER ANALYSIS

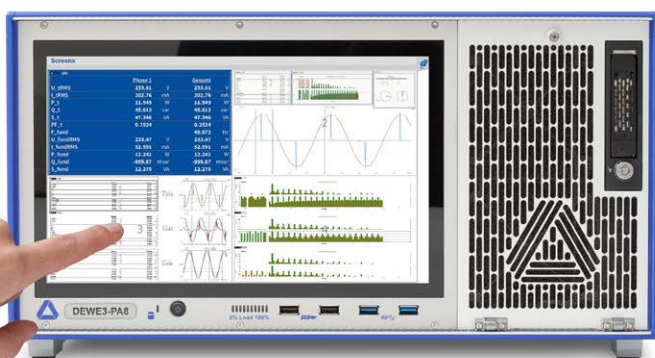
The power analyzer can use its full potential with our easy-to-use OXYGEN measurement software, which supports you with a huge amount of software features. OXYGEN cannot only be used with every DEWETRON measurement system with an integrated PC, but is also compatible to 3rd party components from Vector, GeneSys, and OxTS. And it does not stop there, OXYGEN can also be used on any PC without any hardware to do post-processing by making use of the many offline features, to analyze and to export your recorded data and even to create setups.



- > Analysis of 1-9 phase power systems (1P2W, 2V2A, 3P3W, 3P4W, 2x 3P3W...)
- > Several power systems are logically summarized into power groups
- > Gapless cycle-by-cycle calculation, no blind spots
- > Unique fundamental frequency detection with delay compensation for highest accuracy and reliability
- > BASIC: voltage, current, RMS, AVG, fundamental and symmetrical components, active/reactive/apparent power total and fundamental, energy
- > ADVANCED: harmonics (IEC 61000-4-7), flicker (IEC 61000-4-15), flicker emission (IEC 61400-21) and mechanical power/efficiency
- > EXPERT: rolling calculation meets FGW-TG3










FREELY DEFINABLE SCREENS

Using a DEWETRON power analyzer, you can freely define different screens and easily select between views compatible to traditional power analyzers or design your own preferred views by drag and drop. It is easy to create multiple different views within one setup and select the one of actual interest by a single click. Navigation through the acquired data - including the raw data stored at up to 10 MS/s - is fast and easy. All screens update synchronously, no matter if harmonics, the exact waveform of voltage and current, a special FFT or anything else is of special interest.



PROCESSED SIGNALS IN 100 % SYNC

Our Power Analyzers are also mixed-signal recorders, that means you only need ONE system for all inputs: electrical data, mechanical data, vehicle bus data, video, sound, positioning data, etc.

 V VOLTAGE	 I CURRENT	 P POWER
 THERMO-COUPLES	 POTENTIO-METER	 RTD
 IEPEO (VIBRATION)	 BRIDGE	 LADUNG
 COUNTER	 VIDEO	 SOUND
 GPS SYNC	 IRIG SYNC	 PTP SYNC
 PPS SYNC	 IMU	 SENSOR ADAPTER
 DIGITAL INPUT	 DIGITAL I/O	 ANALOG OUTPUT
 LVDT	 CAN-FD	 CAN J1939
 SCPI Interface	 XCP Slave	 ETHERCAT Slave

TEST STAND INTEGRATION

Leading test stand manufacturers rely on the measurement data from DEWETRON when it comes to reliable testing of important and critical components. Our various interfaces guarantee you a simple integration.

Smart interface technology makes it easy to integrate DEWETRON power analyzers and measurement instruments into various test stand automation systems, such as PAtools® from Kratzer Automation. Depending on the system architecture of the test stand, DEWETRON instruments are equipped with the right interface to ensure reliable data transmission, easy-to-use remote control and remote configuration, e.g. through TCP/IP-based protocols.



EtherCAT INTERFACE

Typ. 100 ch
Typ. 500 S/s per channel

Data transfer & remote control

SCPI OVER ETHERNET

Typ. 100 ch
Up to 10 kS/s per channel

Data transfer & advanced remote control

XCP OVER ETHERNET

Typ. 20 ch
Up to 10 kS/s per channel

Interface to CANape and INCA

CAN CAN-FD

Typ. 20 ch
Typ. 100 S/s per channel

DATA STREAM OVER ETHERNET

Typ. >100 ch
Up to 2 MS/s per channel

DMD READER

Software data exchange library

HIGH-END POWER ANALYZER



POWER ANALYZER	DEWE3-PA8	DEWE3-PA8-RM
Slots for TRION / TRION3 modules	8 TRION / TRION3 (up to 16 phases)	
High-speed channel expansion	Add TRIONet or OXYGEN-NET	
Low-speed channel expansion	XR modules	
Data storage	1 TB Solid State Disk dedicated for data storage	
Optional data storage	(SSD-PCIe-1T-2T) Upgrade from 1 TB to 2 TB industrial grade, PCIe attached Solid State Disk	
Gapless storing rate	Typ. 1 GB/s	
Display	11.6" multi-touch wide-screen, Full HD	No display
POWER SUPPLY		
Input voltage (max.)	90 to 264 V _{AC}	
Sensor power supply	8 x (±15 V / +9 V)	8 x or 16 x (±15 V / +9 V)
Integrated current transducer supply	Yes, with redundant supply	
DIMENSIONS		
Dimensions (W x D x H) without handle/feet	441 x 435 x 222 mm (5 u) (17.4 x 17.1 x 8.7 in.)	442 x 435 x 222 mm (5 u) (17.4 x 17.1 x 8.7 in.)
Weight without modules and batteries	Typ. 14 kg (30.9 lb.)	Typ. 15.8 kg (34.8 lb.)

ACCESSORIES



CURRENT TRANSDUCERS

We provide several solutions for current measurement: from simple shunts to current clamps and high-precision zero-flux transducers. All transducers can be supplied from the DEWETRON instrument.



CURRENT TRANSDUCER SUPPLY

We offer a current transducer box to power up to 8 current transducers directly from your DEWETRON DAQ system.



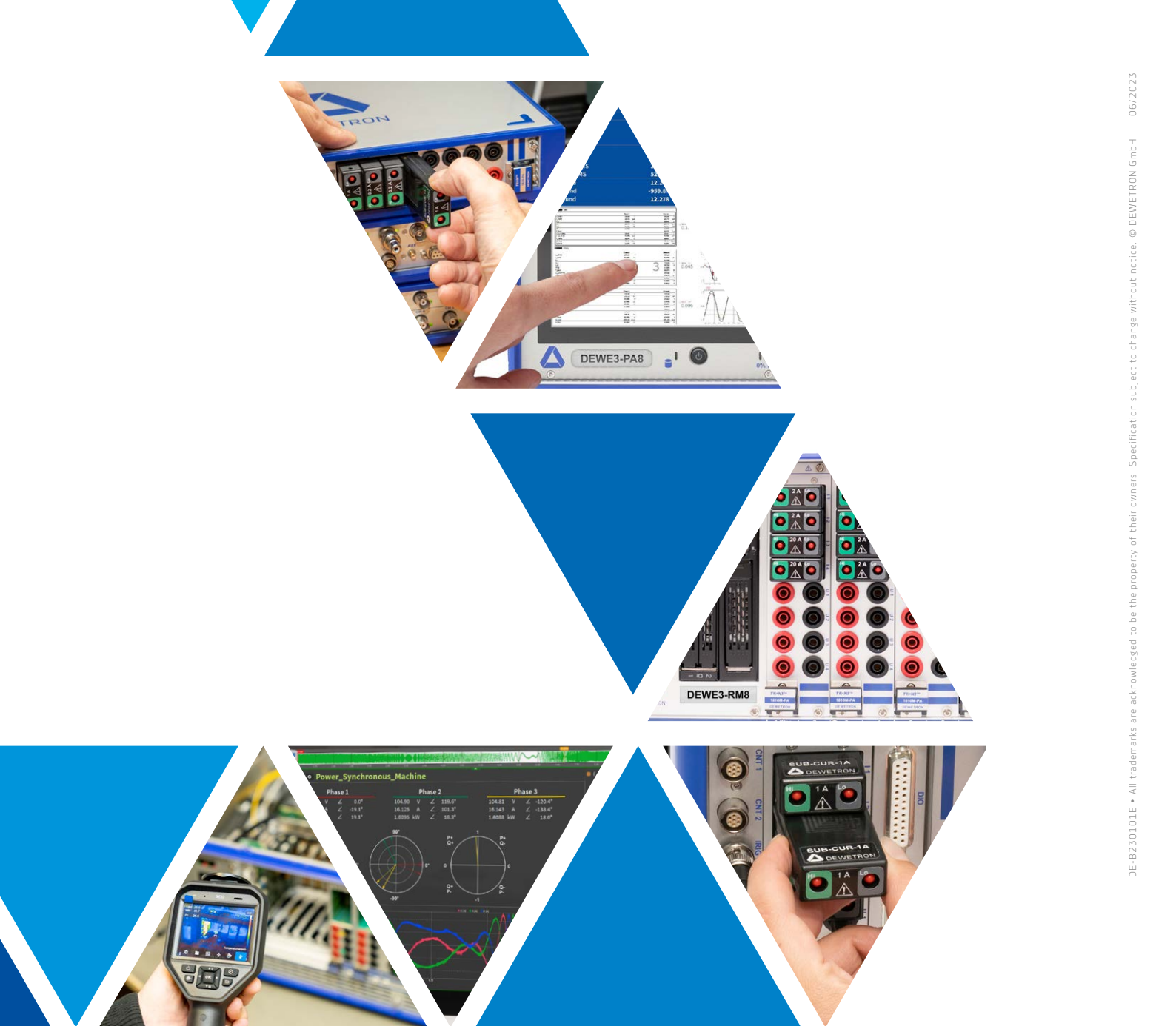
POWER SUPPLY

For mobile applications we provide a battery charger and system power supply with 3 hot-swappable batteries.



TRANSPORTATION

We offer special sturdy carrying cases for the safe transport of all our measurement systems.



ABOUT DEWETRON

DEWETRON is a manufacturer of precision test & measurement systems designed to help our customers make the world more predictable, efficient and safe. Our strengths lie in customized solutions that are immediately ready for use while also being quickly adaptable to the changing needs of the test environment and sophisticated technology of the energy, automotive, transportation and aerospace industries.

More than 30 years of experience and innovation have awarded DEWETRON the trust and respect of the global market. There are more than 25,000 DEWETRON measurement systems and over 400,000 measurement channels in use in well-known companies worldwide.

DEWETRON employs over 120 people in 25 countries and is part of the TKH Group, a global corporation, that specializes in the development and supply of innovative solutions worldwide.

DEWETRON's quality is certified in compliance with ISO9001 and ISO14001. The high integrity of the measurement data is guaranteed by our own accredited calibration lab according to ISO17025.

Get to know our GLOBAL OFFICES



THE MEASURABLE DIFFERENCE.



DEWETRON

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