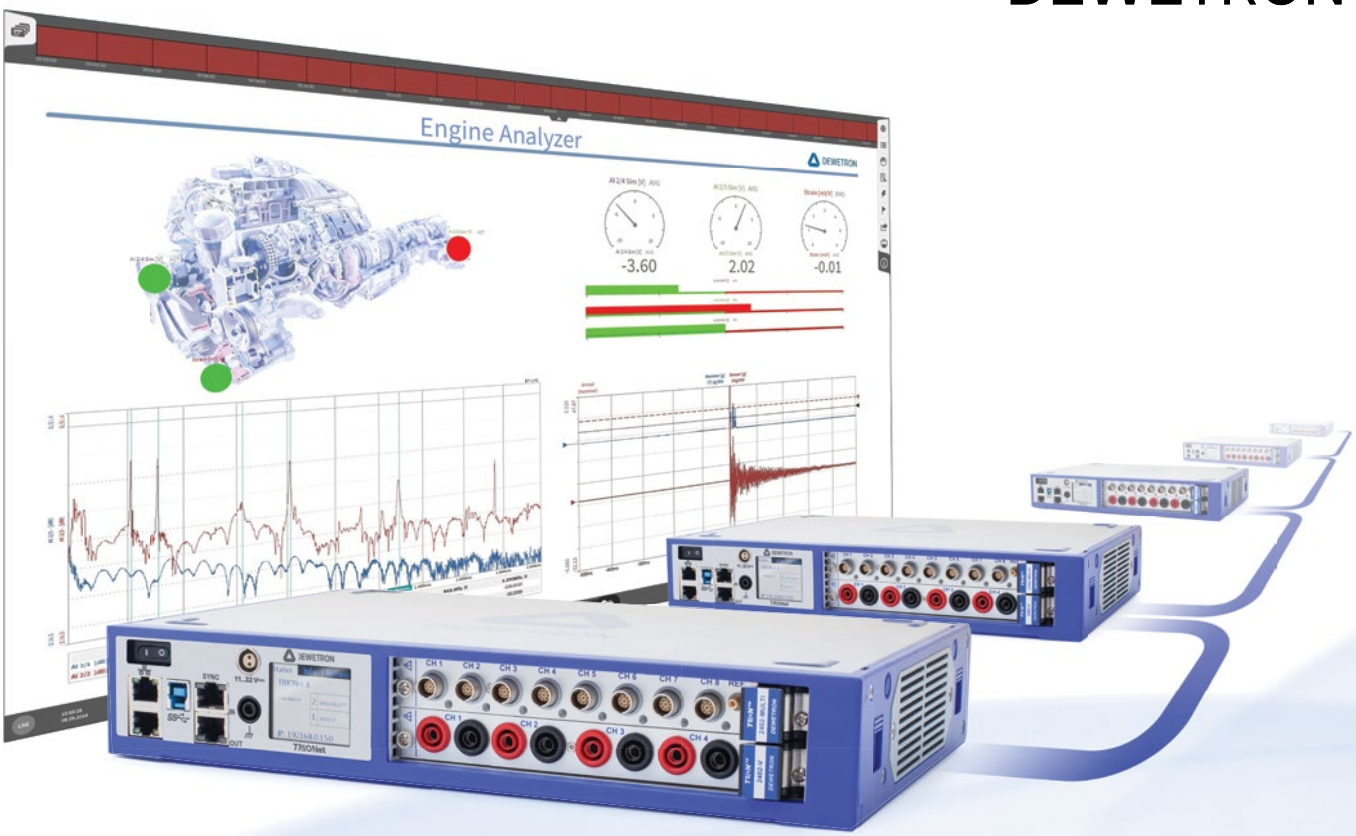
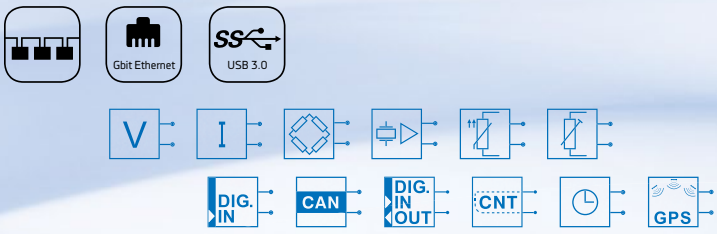
DEWETRON





TRIONet

FOR DISTRIBUTED, SYNCHRONOUS MEASUREMENTS

SIEGER MESSTEC & SENSOR masters 2016 AWARD

TECH BRIEFS 2016 Product of the Year Finalist

TRIONet

THE UNIVERSAL MEASUREMENT SOLUTION

TRIONet – the flexible measurement system for local or distributed measurements. Decentralized measurement tasks are easily managed with intelligent, simple cross-linking and the capability to increase the number of input channels as needed.

LOCAL OR DISTRIBUTED MEASURMENTS WITH ONE SOLUTION

Whether in the field or in the office there can be several hundred feet between the TRIONet and your PC or Laptop, impacting data integrity. TRIONet's integrated synchronization between devices and remote PCs makes the TRIONet the ideal solution for distributed measurement tasks.

Gbit Ethernet

USB 3.0

FLEXIBLE CONNECTION TO THE PC WORLD

USB or Ethernet? There is nothing to choose. With the versatility of both USB 3.0 and Gigabit-Ethernet connector ports the right high-speed interface is always available.

FLEXIBILITY FOR AN UNBEATABLE PRICE-PERFORMANCE RATIO

TRIONet is easily customized to numerous measurement requirements by exchanging one or both of the TRION modules. Expand the channel count by synchronizing other systems with the TRIONet for more versatility.

SIMPLE HANDLING

STATE-OF-THE-ART DATA ACQUISITION & ANALYSIS SOFTWARE OXYGEN

Measure, store, view and analyze your measurement data with maximum efficiency. The 64-bit technology and unique multi-touch user interface will inspire you.

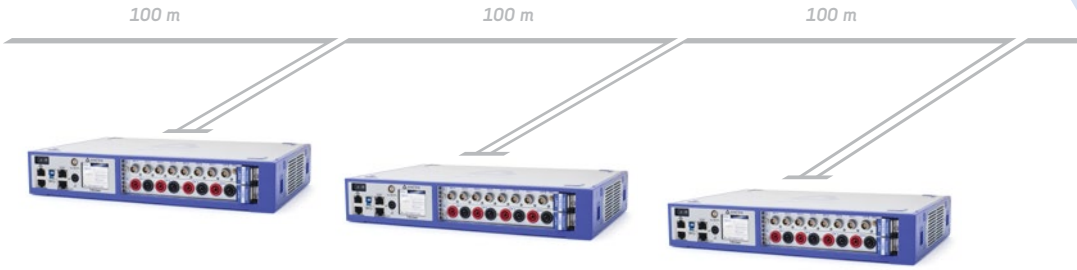
EASY-TO-USE: TOUCH-DISPLAY AND SIMPLE CONFIGURATION

Use TRIONet's touch screen display to easily configure network settings and monitor the status of the connection during measurement. It's that simple.

CONFIGURATIONS

FLEXIBLE APPLICATION

> USB 3.0 or Gigabit Ethernet
> Central or dezentral measurement
> Low-channel count measurements or expand with additional daisy-chained and synchronized systems



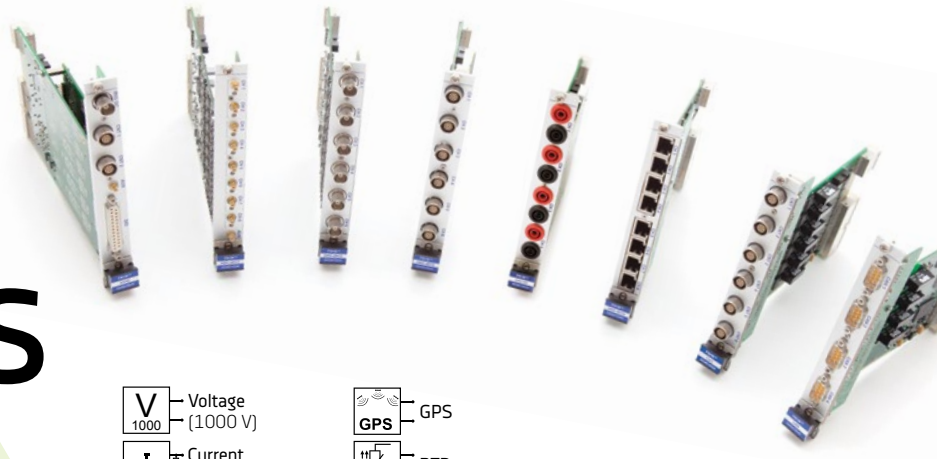
STACKABLE INSTRUMENTS

TRIONet chassis can be safely stacked using the easy locking function.

EXCHANGEABLE TRION™ MODULES

TRIONet has capacity for two TRION™ modules for data acquisition of up to 16 channels. Modules change be exchanged in seconds to customize the unit for additional measurement applications. Almost every variety of sensor is supported by TRION ™ modules.

TRION™ MODULES



- Voltage (1000 V)
- Current (shunt required)
- Current (with shunt inside)
- IEPE (vibration)
- Bridge (strain gage)
- GPS
- RTD
- Absolute time
- Counter inputs
- CAN
- Potentiometer
- Modular Smart Interfaces (e.g. for thermocouple)
- Digital I/O

> Simultaneous sampling for DEWE2 series
> Separate ADC on each channel
> User exchangeable modules

ANALOG MODULES	CHANNELS	SAMPLE RATE PER CH.	RESOLUTION	ISOLATION	CONNECTOR TYPES
TRION-2402-MULTI	4 or 8	204.8 kS/s	24 bit	yes	DSUB, LEMO 0B
TRION-1620-ACC	6	2 MS/s 1 MS/s	16 bit 24 bit	yes	BNC
TRION-1620-LV	6	2 MS/s 1 MS/s	16 bit 24 bit	yes	BNC, LEMO 1B
TRION-2402-V	4 or 8	204.8 kS/s	24 bit	yes	Safety banana sockets
TRION-1603-LV	6	250 kS/s	16 bit	yes	BNC, LEMO 1B
TRION-2402-dSTG	6 or 8	204.8 kS/s	24 bit	-	RJ-45, DSUB, LEMO 1B, LEMO 0B
TRION-2402-dACC	6 or 8	204.8 kS/s	24 bit	-	SMB, BNC

MULTI-FUNCTION MODULES	CHANNELS	SAMPLE RATE PER CHANNEL	RESOLUTION	ISOLATION	INPUT TYPES
TRION-1802-dLV	16 or 32	200 kS/s 100 kS/s	18 bit 24 bit	-	DSUB
TRION-1600-dLV	16 or 32	20 kS/s	16 bit	-	DSUB

DIGITAL MODULES	CHANNELS	SAMPLE RATE PER CHANNEL	RESOLUTION	ISOLATION	INPUT TYPES
TRION-CNT	6 to 18	800 kS/s	80 MHz	yes	DI, CNT
TRION-DI-48	48	2 MS/s	-	yes	DI
TRION-BASE	1 to 8	2 MS/s	80 MHz	-	DIO, CNT, SYNC, AUX
TRION-VGPS	1 GPS	100 Hz	0.01 km/h <10 cm	-	GPS antenna, IRIG In / Out, DIO, CNT, SYNC, AUX
TRION-TIMING	1 to 8	2 MS/s	80 MHz	-	GPS antenna, IRIG In / Out, DIO, CNT, SYNC, AUX

DEDICATED MODULES	CHANNELS	SAMPLE RATE PER CHANNEL	RESOLUTION	ISOLATION	CONNECTOR TYPES
TRION-CAN	2 or 4	-	-	yes	DSUB
TRION-1820-POWER	8 (4 U / 4 I)	2 MS/s	≥ 18 bit	yes	Safety banana, DSUB

SOLUTIONS WITH TRIONet

REAL-TIME DRIVE TESTING ON TRAINS & OTHER ELECTRICAL VEHICLES

PROPERTIES

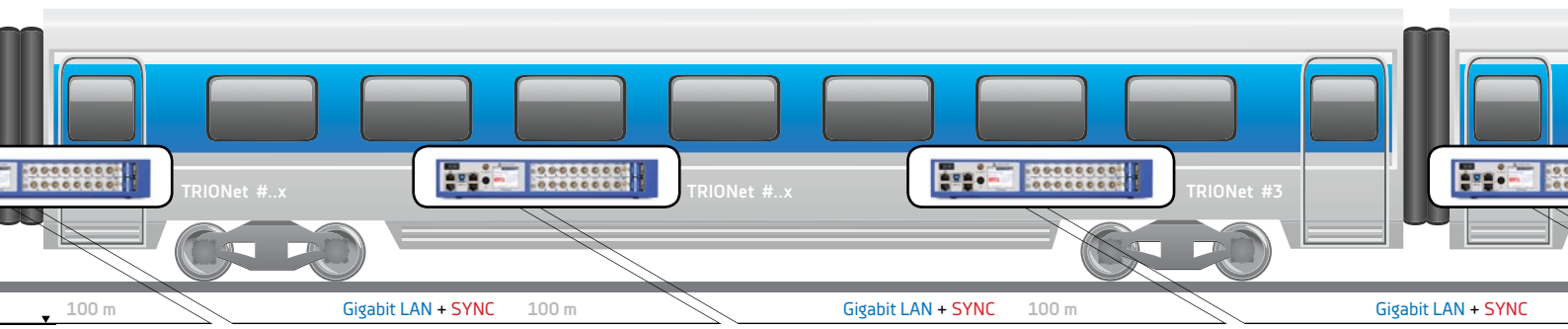
Distributed measurement systems for long distance, distributed power analysis, and mixed signal analysis on trains during real-time drive testing and test bench applications.

ADVANTAGES

High channel density via stackable and modular product concept. Long distance synchronized measurement of power parameters (P, Q, S, PF, efficiency), mechanical parameters (torque, rotation speed) and environmental parameters (temperature inside or outside, winding and bearing temperature of motors and transformers) simultaneously. Intelligent and easy to use interconnection for reliable data recording. High performance and multiple online power and efficiency calculations of several traction systems (bogies), transformers and converters.

BENEFITS

Simultaneous and synchronized measurement and analysis of electrical, mechanical, structural and environmental parameters. High performance, high accuracy and synchronized power calculations of several bogies. Measurement and analysis of high voltage AC and DC train grids. Position tracking, speed measurement as well as ride and comfort testing.



SOLAR & WINDMILL TESTING

PROPERTIES

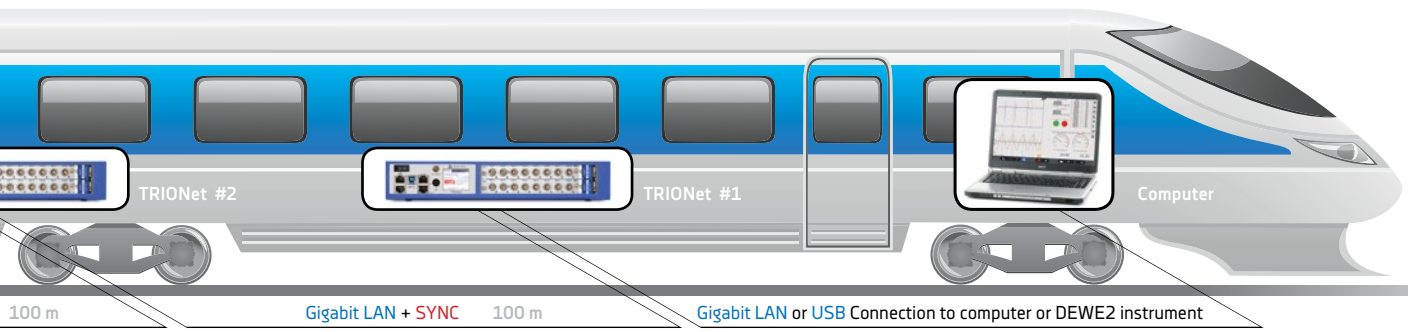
Wide area recording and analysis of Power Quality, as well as the environmental and mechanical parameters of solar and wind farms according to national and international standards and regulations for renewables.

ADVANTAGES

Determination of efficiency and losses of multiple solar farm converters and wind turbine generators at the same time. Distributed, synchronized Power Quality Analysis of different grid connection points in solar and wind farms. Simultaneous recording of environmental parameters (wind speed, wind direction, solar irradiation, temperature, humidity). Structural behavior analysis of turbine blades (vibrations) under different environmental and wind conditions.

BENEFITS

Long distance and wide area determination of solar farms and wind farms overall efficiency. Synchronized, distributed measurement and analysis of Power Quality parameters at different grid connection points. High channel count with modular and stackable systems. Simultaneous, synchronized acquisition of electrical, mechanical and environmental parameters.



	TRIONet
Slots for TRION™ modules [1)]	2
Quasi-static channel expansion	CPAD via TRION-CAN or TRION-MULTI (no EPAD)
LAN	2 x 10/100/1000BASE-TX Gigabit Ethernet
LAN configuration	DHCP or Static IP
USB	USB 2.0; USB 3.0
Synchronization	TRION-SYNC-Bus up to 100 m between nodes
System bandwidth	90 MB/s with one connected TRIONet (up to 50 MB/s with more than one)
Display	Status display with touch-screen
Cooling	2 temperature controlled ultra silent fans
Host system requirements	
Supported operating systems	Windows 7; Windows 10
Supported interfaces	USB 3.0; USB 2.0; 10/100/1000BASE-TX Gigabit Ethernet
Power requirements	
Isolated power supply (max)	10 to 32 V_{DC} (9 to 36 V_{DC})
Power consumption	Without modules 15 W, totally equipped max. 55 W
External power supply (included)	100 to 240 V ~50 to 60 Hz / 65 W
Dimensions	
Dimensions (W x D x H)	320 x 205 x 55 mm (12.6 x 8 x 2.2 in.)
Weight	Typ. 1.9 kg (4.2 lb.) without modules
Environmental specifications	
Operating temperature	-20 °C to +60 °C (with pre-warmed unit)
Storage temperature	-20 to +70 °C
Humidity	10 to 90 % non cond., 5 to 95 % rel. humidity
Max. altitude	3000 m (9840 ft)
Sine vibration (EN 60068-2-6)	20 m/s²
Shock (EN 60028-2-27)	30 g
Random vibration (EN 60721-3-2)	Class 2M3

1) unsupported modules: TRION-FLEXRAY; TRION-A429; TRION-M1553; TRION-MA4; TRION-1628-A0-2

DEWETRON

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- GENERAL SOLUTIONS
- AUTOMOTIVE
- AEROSPACE
- ENERGY & POWER ANALYSIS
- TRANSPORTATION

ABOUT DEWETRON

DEWETRON is an Austrian 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 25 years of experience and innovation have awarded DEWETRON the trust and respect of the global market. There are more than 20,000 DEWETRON measurement systems and over 300,000 measurement channels in use in well-known companies worldwide. Choosing DEWETRON means, having a partner by your side who accompanies you every step of the way.

DEWETRON employs over 150 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 quality is certified in compliance with ISO9001 and ISO14001.