Front-ends



Automotive Energy & Power Analysis Aerospace & Defense Transportation General Test & Measurement



USB solution



ECARD/PCI solution



Ethernet solution

Front-ends

DEWETRON Front-ends are combining signal conditioning with A/D card and software. These units are designed to be connected to YOUR computer. Or use one of our ruggedized industrial models.

Combined with a state-of-the-art computer these instruments have the power of synchronous acquisition and analysis of vastly different signals! All kinds of analog signals, digital I/Os, counters and even CAN bus can be connected. Attach a camera directly to your computer and you even get additional video pictures. Choose from USB, ECARD/PCI or Ethernet interface, depending on your application.

Each unit is controlled by one SYNC-CLOCK[™], either generated internally or from external sync interfaces like DEWE-CLOCK. This SYNC-CLOCK[™] technology allows synchronizing several independent systems even without physical connection. Each system can have hundreds of channels.

Key Features

- Several models for USB, ECARD/PCI or Ethernet interface
- High accuracy and repeatability
- Traceable system specifications
- 16 bit or 24 bit resolution
- 500 kS/s up to 1.6 MS/s total sampling rate
- Synchronous acquisition of analog, digital, counter, CAN bus, video and GPS data
- Modular system configuration using isolated HSI, DAQP or differential MDAQ amplifier modules
- Easy to use software for data acquisition and analysis

The DEWETRON Front-ends enable you to make measurements with highest precision even in harsh environments, using your computer. The ingenious driver and software design is the base for outstanding power and flexibility in applications.





DEWE-50-USB2-8 Most compact instrument for DAQP isolation amplifiers



DEWE-51-PCI-192 Rack-mounted 192 channel system for MDAQ modules

USB Solution

DEWETRON USB instruments are the preferred units to turn your notebook computer into a powerful measurement system. USB is easy to install and convenient to connect, the cable length can be max. 5 meters. All USB instruments have an integrated fixed A/D converter system. Several models offer a synchronization option to enable higher channel counts by daisy-chaining units.

There is a whole range of modular instruments with slots for high performance DAQP signal conditioning modules or positions for cost-effective MDAQ blocks.

Typical use:

Measurement of 8 to 32 channels using a notebook computer

ECARD/PCI Solution

DEWETRON ECARD/PCI solutions are perfectly suited for use with laptop computers as well as with workstations. For all units the interface can either be an ECARD for laptops or a PCI / PCI Express card for workstations. The cable length is limited to 1 meter. All ECARD/PCI instruments offer internal PCI slots to install DEWE-ORION series A/D boards or other PCI cards.

There is a range of portable units which are mostly used to turn laptop computers into data acquisition systems. And there is a range of bigger high channel count units which are mostly used for fixed installations.

The third use of ECARD/PCI devices is to expand existing DEWETRON instruments and systems. The ECARD/PCI solutions either offer slots for high performance DAQP signal conditioning modules or positions for cost-effective MDAQ blocks.

Typical use:

- High quality measurements using DEWE-ORION series A/D cards with a notebook computer
- Rack-mount systems with up to 512 channels



DEWE-211 Portable 16 channel system for MDAQ modules

Ethernet Solution

DEWETRON Ethernet solutions cover two different applications. On the one hand single instruments are used with laptop computers or workstations for data logging and on the other hand multiple units create high channel count distributed systems and achieve almost unlimited stream to disk rates. The cable length reaches up to 100 meters without a hub and several kilometers using fibre-optic LAN.

A very popular way of using a DEWE-NET instrument is to remote control the unit by another computer via Ethernet. It means that the remote computer 100 % controls the instrument and e.g. starts storing. For live data view all or a selection of activated channels are transferred to the remote computer. For highest reliability data can be stored on the instrument and on the remote computer as well.

A typical application is measuring in dangerous environments (e.g. on an engine test stand) and online view the data on a PC outside the test chamber. If huge channel counts are needed and/or the monitoring area is wide a network consisting of several DEWE-NET instruments is built. All instruments are connected via Ethernet (copper or fibre-optic link). Depending on the distance the synchronization of all units is done by a sync cable or by sync interfaces like DEWE-CLOCK. One Master Client is used to setup and control all measurement units. Data is stored locally on each instrument but also can be transferred to the Master Client online and stored there additionally up to the limit of the Ethernet data throughput.

Typical use:

Dynamic monitoring of huge bridges or buildings

USB Devices with 24 bit Resolution

- Isolated DAQP modules
- Easy to install on your computer
- 24 bit resolution
- 204.8 kS/s per channel, simultaneous sampling
- Synchronous CAN interfaces and counter/digital inputs
- DEWESoft-7-SE and OPT-CAN included



Add your choice of signal conditioning,

A/D board(s) and software to complete these systems

Specifications	DEWE-50-USB2-8		
Analog input			
Number of channels	8 (simultaneously sampled)		
Measured values	According installed DAQP modules		
Internal A/D system			
Resolution	24 bit		
Type of ADC	Sigma-Delta		
Sampling rate	204.8 kS/s		
-3 dB bandwidth	76 kHz @ 204.8 kS/s (consider possible limit of DAQP module)		
Accuracy	±0.1 % of range, ±0.5 mV		
Signal to noise @ fs<1000 Hz	< 100 dB		
Crosstalk	< 100 dB		
Counter/Digital inputs			
Number of channels	2 counters or 6 digital inputs (per software each counter can be selected to be 3x digital input)		
Counter modes	Event counting, encoder input, period, pulsewidth, duty cycle, frequency measurement		
Resolution	32 bit		
Time base	102.4 MHz		
Signal levels	TTL/CMOS		
Input voltage protection	30 V		
CAN inputs			
Number of channels	2		
Specification	CAN 2.0B, up to 1 MBaud		
Physical layer	High speed		
Environmental			
	0 to 50°C		
Storage temperature	-20 to 70°C		
Relative humidity	95 % non condensing @ 60°C		
Vibration	thd		
Shock	thd		
Processing			
System	Requires PC based system with DEWESoft software		
Interface			
Rower requirements	000 2.0		
Supply voltage (max.)	10 to 36 V		
Typical power consumption	Tvp. 20 W (5 W internal A/D system + DAOP modules)		
Physical			
Dimensions $(I \times W \times H)$	230 x 181 x 104 mm (9 06 x 7 13 x 4 09 in)		
Weight	Typ. 3 kg (2.5 kg + DAQP modules) 6.6 kg (5.5 kg + DAQP modules)		
Software			
Displays	Recorder, Scope, FFT, 3D Waterfall FFT, Octave,		
Triggers	Edge, Filtered Edge, Window, Pulsewidth, Slope, FFT,		
Online standard mathematics	Formula editor, FIR-, IIR-, FFT-filter, basic statistics, reference curve		
Online special mathematics	Human Body Vibration, Order Tracking, Rotational & Torsional Vibration, Sound Level, Frequency Response Function		
System options			
Option	Description		
50-8-OUT-5	8 BNC connectors on back panel, ±5 V output of DAQx-modules		
50-8-SYNC	Synchronization option for two DEWE-50-USB2-8. Allows using max. two units as a 16 channel system, synchroniza-		

tion cable 50-8-CBL-SYNC-x needs to be ordered additionally.

Analog Input

The internal A/D system offers eight analog inputs, each has its own sigma-delta A/D converter and is sampled at up to 204.8 kS/s at 24 bit resolution. Anti-aliasing filters are included for each channel.

The **DEWE-50-USB2-8** offers eight slots for high performance DAQP isolated signal conditioning modules. Thus any analog sensor can be connected.



Counter/Digital Input

There are Lemo sockets where each can either be used as one counter/encoder input or as three digital inputs – this is a software selection and can be set individually for each socket. Thanks to the special DEWETRON technology, the counter/digital inputs are acquired absolutely synchronously to the analog channels. DEWETRON counters are able to perform

- Basic counting
 Gated counting
- Frequency measurement
- Pulse width measurement
- Up/down counting
- Duty cycle
- Period time measurement
- Two pulse edge separation





CAN Interface

There are two high speed CAN interfaces which are able to acquire data from vehicle CAN – or vehicle OBDII interface – as well as from any sensor outputting CAN data.

Alternatively DEWETRON CPAD2 modules can be connected to a CAN interface to acquire quasi-static thermocouple, RTD, voltage or current signals.



USB Devices with 16 bit Resolution

- Simple USB connection to your computer
- 16 isolated DAQP or 32 differential MDAQ analog inputs
- 16 bit resolution
- Sync option for channel expansion (some models)
- Various power supply options



Choose from four models Add your choice of signal conditioning and software to complete these systems		<u>*************************************</u>
	DEWE-50-USB2-16	DEWE-51-USB2-32
Slots for DAQ or PAD modules	16	-
MDAQ input channels	-	Up to 32
External quasi-static channel expansion	EPAD interface, up to 16 E	PAD2 modules = 128 ch
A/D conversion		
Sampling method	Multiplexed	sampling
Resolution	16	pit
Sampling rate	500 kS/s aggregate 31.25 kS/s per channel	500 kS/s aggregate 15.625 kS/s per channel
Counter and digital inputs		
Counters / digital inputs	Optic	nal
CAN bus		
High-speed CAN bus interfaces	-	
Power supply		
Power supply (max.)	85 to 26	64 V _{AC}
Main system		
Host PC interface	USE	3 2
Supported operating systems	Microsoft® WI	NDOWS® XP
Dimensions (W x D x H)	435 x 245 x (17.1 x 9.6	< 133 mm x 5.2 in.)
Weight	Typ. 5.5 kg	g (12 lbs)
Environmental specifications		
Operating temperature	0 to +5	50 °C
Storage temperature	-20 to +	70 °C
Humidity	10 to 80 % non cond., 5	5 to 95 % rel. humidity
Vibration	EN 60068-2-6, EN 60	0721-3-2 class 2M2
Shock	EN 6006	8-2-27

All DEWE-50-USB2-16-x are prepared for installation of up to 16 high performance DAQP signal conditioning modules. These models offer maximum flexibility as DAQP modules can be added or exchanged at any time by the user. One model offers positions for cost-effective and space saving MDAQ blocks for differential inputs. It can be equipped with up to 32 analog inputs. Only software and DAQP series modules are needed to complete any of these systems.



Carrying handle



DEWE-50-DC option for DC USB interface with hot power supply



plug-and-play capabilities



16 BNCs on the rear for 19" rack mount kit conditioned signal output

Most Popular System Options

	DEWE-50-USB2-16	DEWE-51-USB2-32
50-HANDLE Carrying handle for DEWE-50 series	√	✓
50-16-DC-UPS DC power supply 10 to 32 V with internal UPS battery ~3 min. and external AC adaptor	\checkmark	\checkmark
50-16-DC DC power supply 9 to 36 V	\checkmark	-
50-32-DC DC power supply 9 to 36 V	-	\checkmark
DEWE-POW-24-350 External power supply for 50-xx-DC option, 95 to 260 V_{AC} Input, 24 V_{DC} output	\checkmark	\checkmark
50-16-OUT-5 16 BNC connectors on back panel, ±5 V output of DAQx modules	\checkmark	-
50-16-OUT-10 16 BNC connectors on back panel, ±10 V output of DAQx modules	\checkmark	-
51-USB2-32-OUT-5 32 BNC connectors on back panel, ±5 V output of MDAQ-SUB-x modules	-	\checkmark
51-USB2-32-OUT-10 32 BNC connectors on back panel, ±10 V output of MDAQ-SUB-x modules	-	\checkmark
50-USB2-SYNC connector for synchronizing two DEWE-50-USB2 units (one counter is used for SYNC)	\checkmark	\checkmark
50-USB2-DIO-PANEL-1 Adds 5 isolated counter / encoder inputs and up to 16 digital inputs (TTL level), plus connector for synchronizing two DEWE-50-USB2 units (one counter is used for SYNC)	\checkmark	\checkmark
50-16-MK 19" rack-mount-kit, 3 U	\checkmark	\checkmark

Expandability

The 50-USB-SYNC option enables you to cascade several units to increase the total channel count. One counter is used for the synchronization and the total sampling rate decreases to 250 kS/s aggregate per chassis if two units are connected. For creating a multi chassis system USB and SYNC connection between the different devices are needed.



Cascading of three DEWE-50-USB2-16 to get a total of 48 dynamic channels

ECARD/PCI Series

- Connect to any host PC via Express card, PCI Express or PCI interface
- Eight different models for laptop or workstation computers
- Up to 64 isolated DAQP modules or up to 192 differential MDAQ inputs
- Fast data transfer up to 80 MB/s
- Cascading option for creating high channel count systems



DEWE-50-PCI with **DEWETRON** Instruments

Another popular use of DEWE-50-PCI units is to expand the channel count of DEWETRON instruments. The basic instrument needs to have ORION-SYNC option installed to ensure the synchronous sampling of all internal and external analog inputs. In this case the DEWE-50-PCI usually is attached to the instrument via a PCI host card.









Choose from eight models

Add your choice of signal conditioning, A/D board(s) and software to complete these systems

	DEWE-50-PCI-16	DEWE-50-PCI-32	DEWE-50-PCI-64	
Slots for DAQ or PAD modules	16	32	64	
MDAQ input channels	-	-	-	
External quasi-static channel expansion	EPAD inte	erface, up to 16 EPAD2 modules	s = 128 ch	
Digital I/O, counter, CAN bus	Dep	ending on selected ORION boa	rd(s)	
Main system	'			
Internal PCI slots	1	3	7	
Host PC interface	ExpressCard-	54, optional PCI, PCI-Express o	r ExpressCard	
Supported operating systems		Microsoft® WINDOWS® 7		
Power supply (max.)	85 to 264 $\rm V_{\rm AC}$	90 to 264 $\rm V_{\rm \scriptscriptstyle AC}$	90 to 264 $\rm V_{\rm AC}$	
Dimensions (W x D x H)	435 x 245 x 133 mm (17.1 x 9.6 x 5.2 in.)	435 x 300 x 223 mm (17.1 x 11.8 x 8.8 in.)	435 x 300 x 444 mm (17.1 x 11.8 x 17.5 in.)	
Weight	Typ. 6 kg (13 lbs)	Typ. 10 kg (22 lbs)	Typ. 15 kg (33 lbs)	
Environmental specifications				
Operating temperature		0 to +50 °C		
Storage temperature	-20 to +70 °C			
Humidity	10 to 80 % non cond., 5 to 95 % rel. humidity			
Vibration	EN	60068-2-6, EN 60721-3-2 Class	2M2	
Shock	EN 60068-2-27			
Options				
50-HANDLE Carrying handle for DEWE-50 series	✓	✓	✓	
50-16-DC-UPS DC power supply 10 to 32 V with internal UPS battery ~3 min. and external AC adaptor	\checkmark	-	-	
50-16-DC DC power supply 9 to 36 V	✓	-	-	
$\begin{array}{l} \mbox{DEWE-POW-24-350} \\ \mbox{External power supply for 50-xx-DC option,} \\ \mbox{95 to 260 } V_{\rm AC} \mbox{ Input, 24 } V_{\rm DC} \mbox{ output} \end{array}$	~	-	-	
50-DC-12V DC power supply 9 to 18 V, incl. external AC adaptor	-	\checkmark	✓	
50-DC-24V				

Additional interfaces and sensors

DC power supply 18 to 36 V, incl. external AC adaptor

Option cascading of several DEWE-50-PCI units, occupies 1 PCI slot inside the DEWE-50-PCI unit

50-PCI-CS

50-xx-MK 19" rack-mount-kit,

Measurements are not limited to just classic analog and digital signals. Please find further detailed information to expand your system in the chapter "Components".

 \checkmark 50-16-MK, 3 U high

Needed to complete the system DEWE-ORION "A/D Boards" offer simultaneous sampled

analog inputs, synchronous digital I/Os, high-performance counters and high-speed CAN interfaces. DAQP- or MDAQ signal amplifiers and software are needed as well.





Options to expand the system

VIDEO

1

50-32-MK, 5 U high

Add further "Interface Cards" like ARINC-429, 1553, PCM telemetry, FireWire and analog output or special "Sensors" like synchronized Video, industrial encoders (RIE-360) or GPS.



ARINC





√

50-64-MK, 10 U high

A/D card

www.dewetron.com

NEW

	00000000000000000000000000000000000000			
DEWE-52-PCI-3216	DEWE-51-PCI-16	DEWE-51-PCI-64	DEWE-51-PCI-128	DEWE-51-PCI-192
16	-	-	-	-
Up to 32	Up to 16	Up to 64	Up to 128	Up to 192
	EPAD inte	erface, up to 16 EPAD2 module	s = 128 ch	
	Dep	pending on selected ORION boa	ard(s)	
3	1	7	13	13
	ExpressCard-	54, optional PCI, PCI-Express c	or ExpressCard	
		Microsoft® WINDOWS® 7		
90 to 264 V_{AC}	10 to 36 V _{DC} , incl. external AC adaptor	90 to 264 V_{AC}	90 to 264 V _{AC}	90 to 264 V _{AC}
435 x 300 x 223 mm (17.1 x 11.8 x 8.8 in.)	282 x 230 x 88 mm (11.1 x 9.1 x 3.5 in.)	435 x 300 x 177 mm (17.1 x 11.8 x 7.0 in.)	435 x 300 x 267 mm (17.1 x 11.8 x 10.5 in.)	435 x 300 x 444 mm (17.1 x 11.8 x 17.5 in.)
Typ. 9 kg (20 lbs)	Typ. 3 kg (6.6 lbs)	Typ. 6 kg (13 lbs)	Typ. 9 kg (20 lbs)	Typ. 12 kg (24 lbs)
		0 to +50 °C		
		-20 to +70 °C		
	10 to 8	30 % non cond., 5 to 95 % rel. h	numidity	
	EN	60068-2-6, EN 60721-3-2 Class	2M2	
	-	EN 60068-2-27		
\checkmark	-	\checkmark	\checkmark	\checkmark
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
~	-	1	~	✓
✓	-	✓	✓	✓
✓	-	✓	✓	✓



51-128-MK, 6 U high





50-32-MK, 5 U high





51-64-MK, 4 U high





51-192-MK, 10 U high

PCI- and PCI-Express cards Express-cards to connect DEWE-5x-PC to Notebooks

DEWE-50-DC option for DC Synchronization power supply

19" rack mount kit

to connect DEWE-5x-PCI

MDAQ Configurations of DEWE-51-PCI Series

DEWE-51-PCI-16

The DEWE-51-PCI-16 is prepared for up to 16 MDAQ channels and any combination of MDAQ-SUB-x-BNC and MDAQ-SUB-x-D is supported

DEWE-51-PCI-64

The DEWE-51-PCI-64 is prepared for up to 64 MDAQ channels and there are 2 versions, DEWE-51-PCI-64-A and DEWE-51-PCI-64-B.



DEWE-51-PCI-16



DEWE-51-PCI-64-A has a modular front panel and accepts **u**p to 8 MDAQ-SUB-x-BNC modules

- I MDAQ-SUB-x-D and up to 5 MDAQ-SUB-x-BNC modules
- A MDAQ-SUB-x-D and up to 5 MDAQ-SUB-x-BNC modules
 2 MDAQ-SUB-x-D and up to 4 MDAQ-SUB-x-BNC modules
- 3 MDAQ-SUB-x-D and 1 MDAQ-SUB-x-BNC module
- up to 4 MDAQ-SUB-x-D modules

Max. channel count ANALOG 64 MDAQ channels
DIGITAL I/O card & counter & CAN

DEWE-51-PCI-64-B has a fixed front panel and is prepared for up to 8 MDAQ-SUB-x-D modules

	4	ANALOG	64 MDAQ channels	
wax.	cnannei	count	DIGITAL	I/O card & counter & CAN

DEWE-51-PCI-64-B

DEWE-51-PCI-128

The following standard MDAQ configurations are supported:

MDAQ modules with DSUB connecotors		MDAQ modules with BNC connecotors	
max. number of modules	channels	max. number of modules	channels
-	-	8	128
1	16	6	96
2	32	5	80
3	48	4	64
4	64	2	32
5	80	1	16
6	96	-	-

DEWE-51-PCI-128

DEWE-51-PCI-192

The following standard MDAQ configurations are supported:

MDAQ modules with DSUB connecotors		MDAQ modules with BNC connecotors	
max. number of modules	channels	max. number of modules	channels
-	-	12	192
1	16	10	160
2	32	9	144
3	48	8	128
4	64	6	96
5	80	5	80
6	96	4	64
7	112	2	32
8	128	-	-



DEWE-51-PCI-192

DEWE-51-PCI-64

DEWE-NET Devices

- High-speed data acquisition for laptops or workstations via Ethernet
- Online data transfer or local storing
- Data storage on DEWE-NET device and/or on remote computer
- Fast sampling rates up to 1 MS/s per channel
- Various models with up to 64 channels available



	DEWE-510-NET	DEWE-501-NET	DEWE-211-NET
DAQ / PAD amplifier slots	16	-	-
MDAQ amplifier input channels	-	Up to 64	Up to 16
Combined DAQ / PAD slots	16 DAQ / PAD,		
and MDAQ input channels	up to 32 MDAQ (BNC only)	-	-
Internal conditioned channels	-	-	-
Int. PCI slots for ORION cards	3	3	1
Quasi-static channel expansion	EPAD interface	EPAD interface	EPAD interface
	Up to 16 EPAD2 = 128 ch	Up to 16 EPAD2 = 128 ch	Up to 16 EPAD2 = 128 ch
A/D conversion		· · · · · · · · · · · · · · · · · · ·	
Sampling method		Simultaneous sampling	
Sampling rate		According to selected ORION card	
Resolution		According to selected ORION card	
Digital I/O, counters and CAN			
Digital I/O	8, TT optional more, according	L level to selected ORION cards	8, TTL level
Counters / digital inputs	optior	2 counters or 8 digital inputs, TTL level nal more, according to selected ORION c	ard(s)
High-speed CAN bus interfaces	Up to 4, optional	Up to 4, optional	Up to 2, optional
Data storage 1)			
Technology	Hard disk	Solid State Disk	Solid State Disk
Capacity	1000 GB	32 GB	32 GB
Typ. duration of recording (16 ch. / 10 kS/s/ch. / 16 bit)	35 days	1 day	1 day
Data throughput ²⁾	Typ. 70 MB/s	Typ. 40 MB/s	Typ. 40 MB/s
Main system ¹⁾			
Ethernet interface	1 GBit LAN (2x)	1 GBit LAN	1 GBit LAN (2x)
Processor	Intel® Core™ i5	Intel [®] Core™ i5	Intel® Core™ i5
Power supply			
Standard (max.)	90 to 264 V_{AC}	Battery powered, ~2 hrs. operation, incl. ext. AC power supply	8 to 30 $\rm V_{\rm _{DC}},$ incl. ext. AC power supply
Optional	Battery powered, ~2 hrs. operation, incl. ext. AC power supply	External DC power supply	Stackable battery-pack for ~2 hrs. operation with wide range DC inp.
Dimensions			
Dimensions (W x D x H)	439 x 308 x 181 mm (17.2 x 12.1 x 7.1 in.)	439 x 209 x 181 mm (17.2 x 8.2 x 7.1 in.)	317 x 252 x 92 mm (12.4 x 9.9 x 3.6 in.)
Weight	Typ. 8 kg (17.6 lb.)	Typ. 6 kg (13.2 lb.)	Typ. 5 kg (11 lb.)
¹⁾ Please find current specifications in the lat	test price list		

²⁾ Depending on configuration setup

Additional interfaces and sensors

Measurements are not limited to just classic analog and digital signals. Please find further detailed information to expand your system in the chapter "Components".

Needed to complete the system

DEWE-ORION "A/D Boards" offer simultaneous sampled analog inputs, synchronous digital I/Os, high-performance counters and high-speed CAN interfaces. DAQP- or MDAQ signal amplifiers and software are needed as well.





Options to expand the system

Add further "Interface Cards" like ARINC-429, 1553, PCM telemetry, FireWire and analog output or special "Sensors" like synchronized Video, industrial encoders (RIE-360) or GPS.





A/D card

ARINC

VIDEO

	DEWE-510-NET	DEWE-501-NET	DEWE-211-NET
510-DC-12V Power supply 9 to 18 $\rm V_{\rm pc}$ (no internal battery), incl. external AC adaptor	\checkmark	-	-
510-DC-24V Power supply 18 to 36 $V_{\rm pc}$ (no internal battery), incl. external AC adaptor	✓	-	-
$\begin{array}{l} \textbf{510-PS-BAT} \\ \textbf{Battery power supply with UPS function,} \\ \textbf{18} 24 \ V_{\text{DC}} \ \text{non-isolated input, incl. external AC adaptor,} \\ \textbf{3 slots for hot-swappable batteries, 3 batteries for appr. 3 hours operation included, for DC operation always add DEWE-DCDC-24-300-ISO \end{array}$	\checkmark	-	-
DEWE-DCDC-24-300-ISO External DC/DC converter with isolation, 9 to 36 V_{pc} input range, 24 V_{pc} output	\checkmark	~	-
$\begin{array}{l} \textbf{DEWE-UPS-150-DC} \\ \textbf{External 130 W UPS and multi-battery charger with 9 36 V_{_{DC}} input range \\ \textbf{2 slots for BAT-95WH batteries, 2 batteries included} \end{array}$	-	-	✓
BAT-95WH Spare Lithium-Ion battery, 14.4 V, 95Wh, max. 8A	✓	~	×
BAT-CHARGER-1 Desktop battery charger for 1 battery, incl. external AC adaptor	✓	~	~

Modes of Operation

DEWE-NET data acquisition units can be linked to a measurement network. There are three modes of operation:

- Single DEWE-NET device attached to a single client computer
- Multiple DEWE-NET devices attached to a single client computer
- Single DEWE-NET device attached to multiple client computers

With these three modes almost any application can be covered. From simple remote controlled data logging over distribution of computing power to distributed measurements over large distances – everything is possible.

Single DEWE-NET Device attached to a Single Client Computer

The DEWE-NET device usually is fully remote controlled by your computer. That means that the client computer 100 % controls the DEWE-NET device and e.g. starts storing. For live data view all or a selection of activated channels are transferred to the remote computer. Data can be stored on the NET device and on the remote computer. The DEWE-NET unit keeps acquiring and storing data if the client computer is disconnected. Of course the remote computer can be reconnected at any time and take full control of the device.

Multiple DEWE-NET Devices attached to a Single Client Computer

Mainly this mode is used in case of distributed systems, e.g. in long trains or on huge bridges.

A second good reason to use this mode is when the data rates are too high for a single instrument. The disk storing rate of different instruments ranges from 40 MS/s to 70 MS/s.

Example: Storing 64 channels, 16 bit resolution at 1 MS/s per channel results in 128 MB of data per second which is too much for a single device. The solution is using two 32 channel DEWE-NET devices and store 64 MB/s in each.

In such configuration all instruments must be synchronized to each other. There are multiple choices:

- Synchronization cable (limited length, depending on sampling rate and A/D technology, range from 30 m to 200 m)
- IRIG time (requires DEWE-CLOCK sync interface)
- GPS time (requires DEWE-CLOCK sync interface)
- NTP, Network Time Protocol (requires a LAN time server)

Also in this configuration all or selected channels of the whole measurement network can be transferred to the remote computer.

Of course multiple computers can connect to the network in a "view" mode.



Single DEWE-NET Device attached to Multiple Client Computers

In this mode there is one DEWE-NET device controlled by one "master" client and there are several "view" clients.

The **master client** is the remote computer which is controlling the DEWE-NET device and e.g. changing the measurement setup, storing strategy, start and stop measurements etc.

The **view clients** only can select channels of interest and transfer them over the network (up to the bandwidth limit of the network) to view the data. All transferred channels also can be stored directly onto the view clients hard disk.

Master client



View client



View client

Models

DEWE-510

Most flexible model, prepared for DAQP isolated analog input amplifier modules. DAQP conditioners offer highest bandwidth, great accuracy, different input ranges and integrated filters. Besides the single channel modularity – a module easily can be changed by the user at any time – the main advantage of these modules is the high galvanic isolation which ensures safe measurements, high quality results and make them almost indestructible. See chapter "Signal Conditioning" for details.



DEWE-511

There are two versions, DEWE-511-A and DEWE-511-B. Both are for sensor input via differential MDAQ analog input amplifiers. MDAQ modules are available in cost efficient and space saving 8-channel blocks. See chapter "Signal Conditioning" for details.





DEWE-511-A

DEWE-511-B

DEWE-512

This version combines 16 slots for isolated DAQP modules and 2 positions for differential MDAQ blocks. Thus it enables you configuring a cost optimized system that needs isolated inputs, e.g. high voltage signals, and a number of differential inputs, e.g. accelerometers.

Note that only MDAQ-SUB-x-BNC fit into this model due to limited space of 1.5U.



DEWE-512

DEWE-501

There are two versions, DEWE-501-A and DEWE-501-B. Both are for sensor input via differential MDAQ analog input amplifiers. MDAQ modules are available in cost efficient and space saving 8-channel blocks. See chapter "Signal Conditioning" for details.



DEWE-501-A

DEWE-501-B

DEWE-211

Version for sensor input via differential MDAQ analog input amplifiers. MDAQ modules are available in cost efficient and space saving 8-channel blocks. See chapter "Signal Conditioning" for details.



