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

DEWE-2608

Technical reference manual

ISO9001

Re-inventing Data Acquisition

worldwide
DEWETRON
www.dewetron.com

Thank you!

Thank you very much for your investment in DEWETRON's unique data acquisition systems. These are top-quality instruments which are designed to provide you years of reliable service. This guide has been prepared to help you get the most from your investment, starting from the day you take it out of the box, and extending for years into the future.

This guide includes important startup notes, as well as safety notes and information about keeping your DEWETRON system in good working condition over time.

We strongly suggest that you read this entire manual, especially the safety and care sections, as well as to avoid damaging your DEWETRON system.

What is the DEWE-2608?

This product is used for measuring of different physical and/or electrical sizes (depending on model or configuration). The connection is depending on model or configuration and takes place via safety banana plugs, BNC connectors (± 50V max.), D-SUB connectors (± 50V max.), thermocouple connectors (± 50V max.), BINDER® connectors (± 50V max.) or LEMO® connectors.

Preface

Notes

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Training

DEWETRON offers training at various offices around the world several times each year. DEWETRON headquaters in Austria have a very large and professional conference and seminar center, where training classes are conducted on a regular basis starting with sensors and signal conditioning, A/D technology and software operation. For more information about training services, please visit:
http://www.dewetron.com/support/training

Dewetron Inc. in the USA also has a dedicated training facility connected to its headquarters, located in Rhode Island. For more information about training services in the US, please visit:
http://www.dewamerica.com/support/training

Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your DEWETRON data acquisition system is delivered, it is calibrated at our DEWETRON headquater. Each of this system is delivered with a certificate of compliance with our published specifications. Detailed calibration reports from our calibration system are available for purchase with each order. We retain them for at least one year, so calibration reports can be purchased for up to one year after your system was delivered.

Support

DEWETRON has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or DEWETRON directly.

For Asia and Europe, please contact:

DEWETRON Ges.m.b.H.
Parkring 4
A-8074 Graz-Grambach
AUSTRIA
Tel.: +43 316 3070
Fax: +43 316 307090
Email: support@dewetron.com
Web: http://www.dewetron.com

The telephone hotline is available
Monday to Friday between
08:00 and 17:00 CET (GMT +1:00)

For the Americas, please contact:

DEWETRON, Inc.
10 High Street, Suite K
Wakefield, RI 02879
U.S.A.
Tel.: +1 401 284 3750
Toll-free: +1 877 431 5166
Fax: +1 401 284 3755
Email: support@dewamerica.com
Web: http://www.dewamerica.com

The telephone hotline is available
Monday to Friday between
08:00 and 17:00 GST (GMT -5:00)

Service/repairs

The Team of DEWETRON also performs any kinds of repairs to your system to assure a safe and proper operation in future. For information regarding service and repairs please contact your local distributor first or DEWETRON directly.

Notice

The information contained in this document is subject to change without notice.

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Warranty Information

A copy of the specific warranty terms applicable to your DEWETRON product and replacement parts can be obtained from your local sales and service office.

Restricted Rights Legend

Use austrian law for duplication or disclosure.

DEWETRON GesmbH
Parkring 4
A-8074 Graz-Grambach / Austria

Printing History

Please refer to the page bottom for printing version.

Safety symbols in the manual

Indicates hazardous voltages.

WARNING	*Calls attention to a procedure, practice, or condition that could cause bodily injury or death.*
CAUTION	*Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.*

WARNINGS

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. DEWETRON Elektronische Messgeraete Ges.m.b.H. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as option and will not be shipped as standard parts.

For safety reasons max. 50 V may be applied to the BNC input-connectors!
Refer to the regulation of maximum allowable touch potential.

Safety instructions

Your safety is our primary concern! Please be safe!

General safety and hazard warnings for all DEWETRON systems

- Use this system under the terms of the specifications only to avoid any possible danger.
- Maintenance will be executed by qualified staff only.
- During the use of the system, it might be possible to access another parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advices for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- The system is grounded via a protective conductor in the power supply cord. To avoid electric shocks, the protective conductor has to be connected with the ground of the power network. Before connecting the input or output connectors of the system, make sure that there is a proper grounding to guarantee potential free usage. For countries, in which there is no proper grounding, please refere to your local legally safety regulations for safety use.

  DC systems: Every DC system has a grounding connected to the chassis (yellow/green safety banana plug).
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please carefully read the corresponding specifications in the product manual.
- The inputs are not, unless otherwise noted (CATx identification), for connecting to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorised personnel only.
- Any use in wet rooms, outdoors or in adverse environmental condition is not allowed!
  Adverse environmental conditions are:
  - Moisture or high humidity
  - Dust, flammable gases, fumes or dissolver
  - Thunderstorm or thunderstorm conditions (except assembly PNA)
  - Electrostatic fields, et cetera.
- The measurement category can be adjusted depending on module configuration.
- Any direct voltage output is protected with a fuse against short cut and reverse-polarity, but is NOT galvanically isolated (except it is explicit marked on the system).
- The system must be connected and operated to an earthed wall socket at the AC mains power supply only (except for DC systems).
- Any other use than described above may damage your system and is attended with dangers like shortcut, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened (except for changing DAQ, DAQP, PAD modules).

- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore, if
  - the system is damaged obviously or causes strange noises.
  - the system does not work anymore.
  - the system has been exposed to long storage in adverse environmental.
  - the system has been exposed to heavy shipment strain.
- DO NOT touch any exposed connetors or components if they are live wired. The use of metal bare wires is not allowed. There is a risk of short cut and fire hazard!
- Warranty void if damages caused by disregarding this manual. For consequential damages NO liability will be assumed!
- Warranty void if damages to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE). Exception: changing modules like DAQ, DAQP or PAD.
- The assembly of the system is equivalent to protection class I. For power supply, only the correct power socket of the public power supply must be used, except the system is DC powered.
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short cut and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy overvoltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated curcuits and so on, are dry.
- DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of:
  - high magnetic or electromagnetic fields
  - transmitting antennas or high-frequency generators

  For exact values please refere to enclosed specifications.
- Use measurement leads or measurement accessories aligned to the specification of the system only. Fire hazard in case of overload!
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might charged, even the system has been removed from the power supply.
- The electrical installations and equipments in industrial facilities must be observed by the security regulations and insurance institutions.

Safety instructions

- The use of the measuring system in schools and other training facilities must be observerd by skilled personnel.
- The measuring systems are not designed for use at humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already lower level may damage your system. For exact values please refere to enclosed specifications.
- Please also consider the detailed technical reference manual as well as the security advices of the connected systems.

This product has left the factory in safety-related flawless and proper condition.
In order to maintain this condition and guarantee safety use, the user has to consider the security advices and warnings in this manual.

EN 61326-3-1:2008

IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1. Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as “operationally well-tried”, are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for protection of buildings, are excluded from the scope of IEC 61326-3-1.

CAUTION

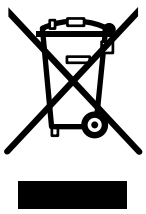
- The system BIOS is protected by password. Any change in the BIOS may cause a system crash. When the system is booting, do not press ESC-button on keyboard. This may clear the BIOS settings and cause system faults.
- Any change in the file structure as deleting or adding files or directories might cause a system crash.
- Before installing software updates contact DEWETRON or your local distributor. Use only software packages which are released by DEWETRON. Further informations are also available in the internet (http://www.dewetron.com).
- After power off the system wait at least 10 seconds before switching the system on again. Otherwise the system may not boot correct. This prolongs also the life of all system components.

Windows updates and antivirus/security software

Before installing Windows software updates consult with DEWETRON for compatibility guidance. Please also keep in mind that the use of any antivirus or other security software may slow down your system and may cause data loss.

Problematic network stacks

Often intrusive IT software or network processes can interfere with the primary function of the DEWETRON system: to record data. Therefore we recommend strongly against the installation of IT/MIS software and running their processes on any DEWETRON data acquisition system, and cannot guarantee the performance of our systems if they are so configured.



Environmental Considerations

Information about the environmental impact of the product.

Product End-of-Life Handling

Observe the following guidelines when recycling a DEWETRON system:

System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at it's end of life! Please recycle this product in an appropriate way to avoid an unnecessary pollution of the environment and to keep natural resources.

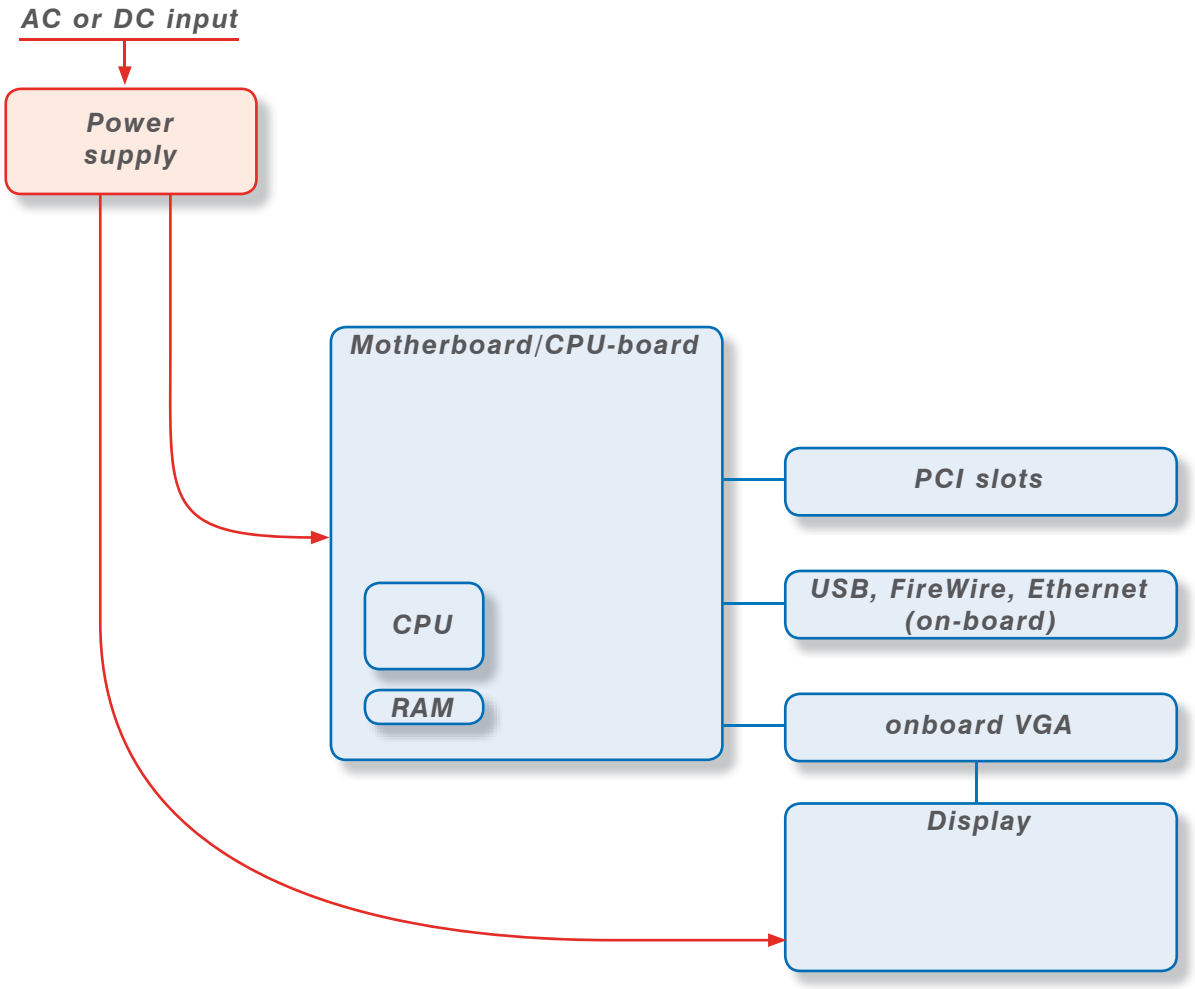
This symbol indicates that this system complies with the European Union’s requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further informations about recycling on the DEWETRON web site
www.dewetron.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment, and is outside the scope of the 2002/95/EC RoHS Directive. This product is known to contain lead.

Signal processing

Blockdiagram of the internal signal processing

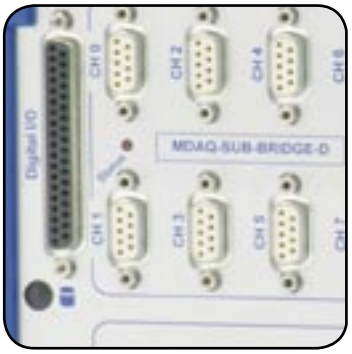


First steps

1

Power-on your system.

2



Connect your sensors to the system.

3

Run DEWESoft usually via "Start" >"Programs" > "Dewetron" > "DEWESoft x.x" > "DEWESoft x.x"

4

Start recording your data!

First steps

Notes

DEWE-2608 - Industrial PC

- Portable industrial PC
- Up to 7 ISA / PCI slots
  (depending on configuration)

System specifications

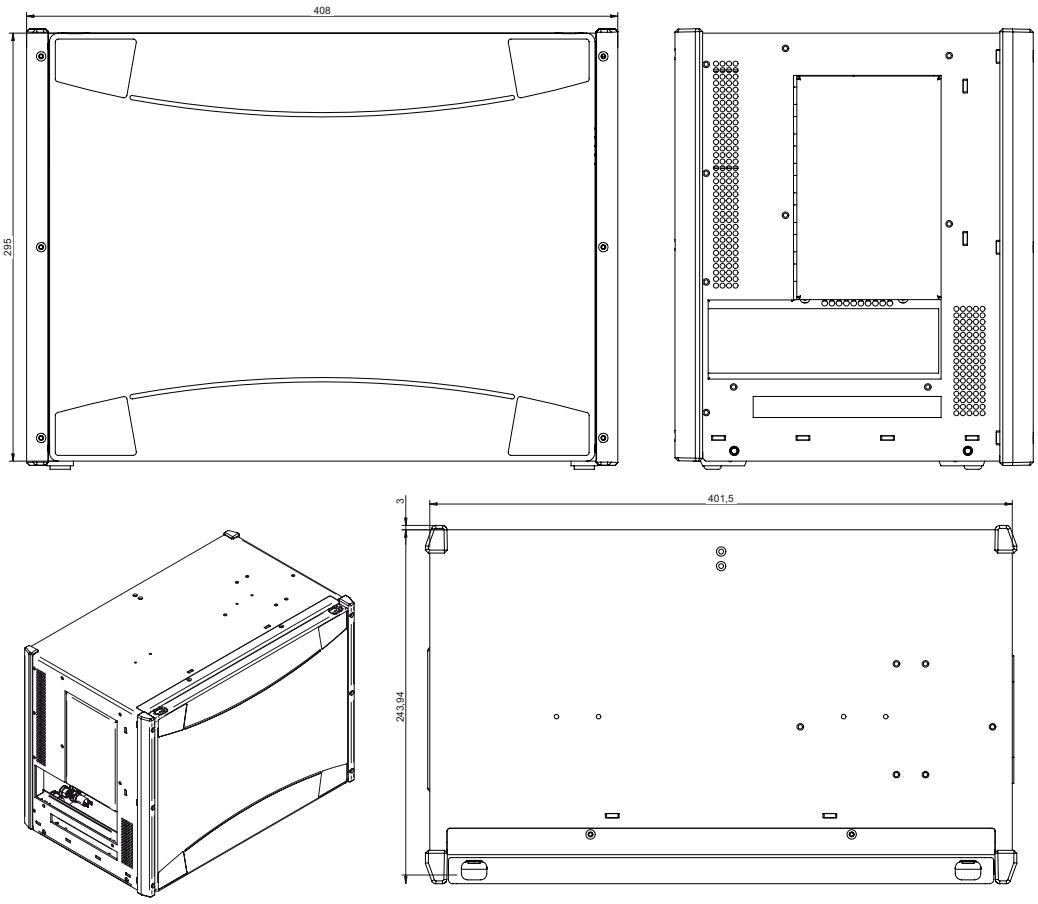
	DEWE-2608	
Standard power supply:	Input range 100 to 240 V_{AC} input (50/60 Hz)	Model ❑ MPM-842P ❑ BEA-640 For details see next pages!
Power supply options: 2600-POW-BAT	Battery powered with 18 to 24 V_{DC} input	deactivate ❑ XP-04 with DC-123
Operating temperature:	0 °C to +50 °C	
Operating temperature with 2600 POW-BAT option:	0 °C to +50 °C when discharging batteries 0 °C to +45 °C when charging batteries	
Storage temperature:	-20 °C to +70 °C	
Humidity (operating):	10 % to 80 %, non condensing 5 % to 95 %, rel. humidity	
Vibration test** EN 60068-2-6 (exceeds MIL-STD 810F 514.5 procedure I)	Shape Frequency range Acceleration Sweep rate Duration Test in 3 directions	
Vibration test** EN 60721-3-2 Class 2M2	Shape Frequency range Power spectral density Duration	
Shocktests** EN 60068-2-27 (Exceeds MIL-STD 810F 516.5 procedure I)	Shape Acceleration amplitude Duration Test in 3 axis, 3 shocks in each axis and direction	
Dimensions (W x D x H):	approx. 409 x 245 x 291 mm (16.1 x 9.6 x 11.5 in.)	
Weight:	typ. 14 kg (30.8 lbs), depending on configuration	

*) depending on system configuration! For details see next pages.
**) tested with SSD disc

Note: If option 2600-PS-BAT is installed in your system and you don't use it for more than 2 weeks, please remove the batteries and store them separately! Otherwise the batteries will be discharged completely and may be destroyed!

Main System

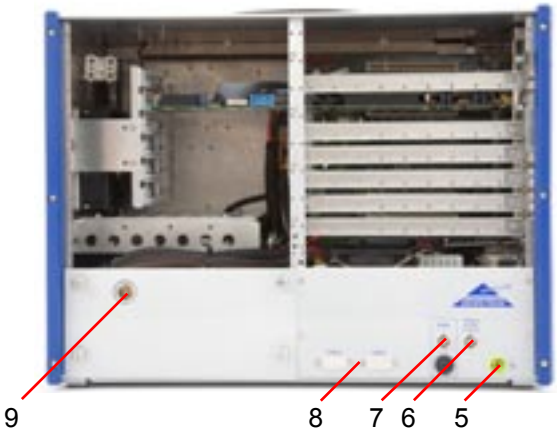
Dimensions*



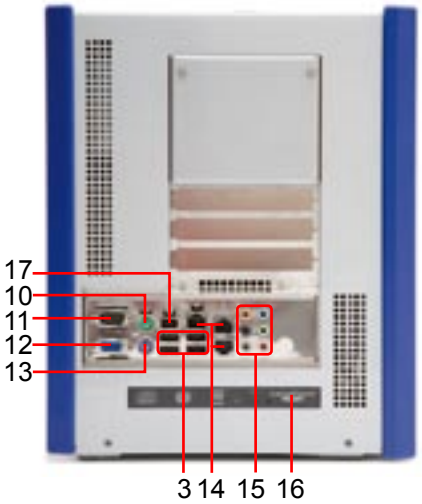
* Dimensions in mm
(1 inch = 25.4 mm)

DEWE-260x at a glance

Typical DEWE-2600 front view



Typical DEWE-2608 rear view



1 Built in speakers
2 External HDD access
3 USB interface connector
4 Power-on button
5 Ground connector
6 Power supply for accessories (12 V_{DC} / 1.5 A)
7 EPAD connector
8 CAN connector
9 Power supply input connector (with option 2600-PS-BAT)
10 PS/2 mouse connector
11 RS-232 interface connector
12 VGA connector
13 PS/2 keyboard connector
14 Ethernet LAN connector
15 Audio device (LINE IN, MIC, LINE OUT)
16 DVD multi-drive
17 IEEE-1394 (FireWire®) connector

Note: The location of the connectors might vary from system to system and depends on configuration

3 USB interface connectors (Universal Serial Bus)

The USB interface connectors meets standard USB pin assignment.

4 Power-on button

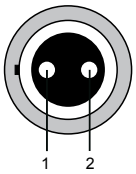
The power-on push button has to be used to switch on the system. It only works when the main power switch (20) is on.

5 Ground connector

For some kind of measurements, it's necessary to give the system an additional ground connection.

6 Power supply for accessories

To supply your accessories with 12 V_{DC}. Fused with an 1.5 A self-recovering fuse.



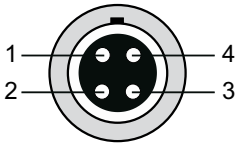
Lemo EGG.1B.302

Pin assginment
1: +12 V, max 1.5 A
2: GND

Mating connector: LEMO FGG.1B.302.CLAD52Z (for cable diameter 4.1 to 5.0 mm)
LEMO FGG.1B.302.CLAD62Z (for cable diameter 5.1 to 6.0 mm)

7 EPAD connector (LEMO)

To connect DEWETRON EPAD modules to the system.



Lemo EGG.1B.304

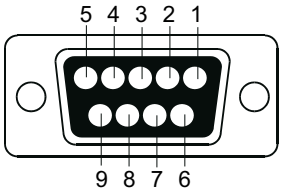
Pin assignment
1: RS-485 A
2: RS-485 B
3: +12 V
4: GND
Shield is connected on housing

Mating connector: LEMO FGG.1B.304.CLAD52Z (for cable diameter 4.1 to 5.0 mm)
LEMO FGG.1B.304.CLAD62Z (for cable diameter 5.1 to 6.0 mm)

8 CAN connector (optional)

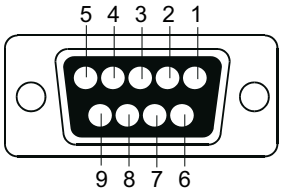
This connector supports the CAN signals of the built-in A/D board. If this board does not support CAN signals, the connector is not available.

CAN 0:



Pin assignment
1: +5 V
2: CAN0_L
3: GND
4: n.c.
5: n.c.
6: GND
7: CAN0_H
8: n.c.
9: +12 V

CAN 1:



Pin assignment
1: +5 V
2: CAN1_L
3: GND
4: n.c.
5: n.c.
6: GND
7: CAN1_H
8: n.c.
9: +12 V

9 Power supply input connector

For details see chapter power supply.

10 PS/2 mouse / keyboard connector

The mouse / keyboard connector could be used to connect a keyboard or an external PS/2 mouse. The connector meets standard PS/2 pin assignment.

11 RS-232 interface connector

The RS-232 interface connector meets standard RS-232 pin assignment.

12 VGA connector

The VGA connector meets standard VGA pin assignment.

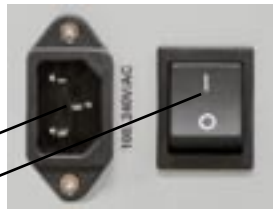
14 Ethernet connector

The DEWE-2600 system supports 10/100/1000 BaseT Ethernet with standard RJ45 connector.

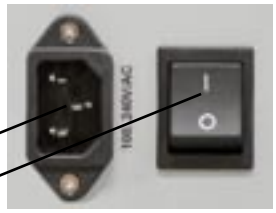
Power supply

AC standard power supply

400 W AC power supply	MPM-842P
Input:	
Input range:	100 to 240 V_{AC} (auto selecting)
Input frequency:	47 to 63 Hz
Max. input current:	8 A (115 V_{AC})
Output:	
Output power:	400 W continuous (450 W peak)
Output voltages:	+3.3 V (max. 22 A) +5 V (max. 21 A) +5 Vsb (max. 1.5 A) +12 V (max. 22 A) -12 V (max. 0.8 A)



400 W AC power supply	BEA-640
Input:	
Input range:	100 to 240 V_{AC} (active PFC)
Input frequency:	47 to 63 Hz
Max. input current:	7 A (115 V_{AC}), 3.5 A (230 V_{AC})
Output:	
Output power:	400 W continuous
Output voltages:	+3.3 V (max. 28 A) +5 V (max. 35 A) -5 V (max. 0.5 A) +5 Vsb (max. 2 A) +12 V (max. 30 A) -12 V (max. 0.8 A)



Internal battery power supply: option DEWE-2600-PS-BAT

320 W DC power supply with XP-04 battery management	
Input:	
Input range:	18 to 24 V_{DC} (nom. 18 V_{DC})
Input frequency:	DC
Max. input current:	12 A
External AC power supply:	90 to 260 V_{AC} (DEWE-POW-24-350 included as standard accessory)
Output:	
Output power:	320 W with XP-04 battery management (with DCDC-123)
Output voltages:	+3.3 V (max. 10 A) +5 V (max. 10 A) +12 V (max. 12 A)

Power supply pin assignment:

Connector type
2-pin. male
LEMO EGJ.2B.302

If option 2600-PS-BAT is installed, there are 3 slots for hot-swappable smart batteries available in the system. Standard shipment includes 2 smart batteries, more can be ordered additionally (option BAT-95WH).

Optional cables:
C7502: LEMO 2B jack to LEMO 2B plug, 2 m. (used for connecting DEWE-2608 to DEWE-POW-24-350 or to DEWE-DCDC-24-350-ISO)
C8502: LEMO 2B jack to banana plugs, 2 m.

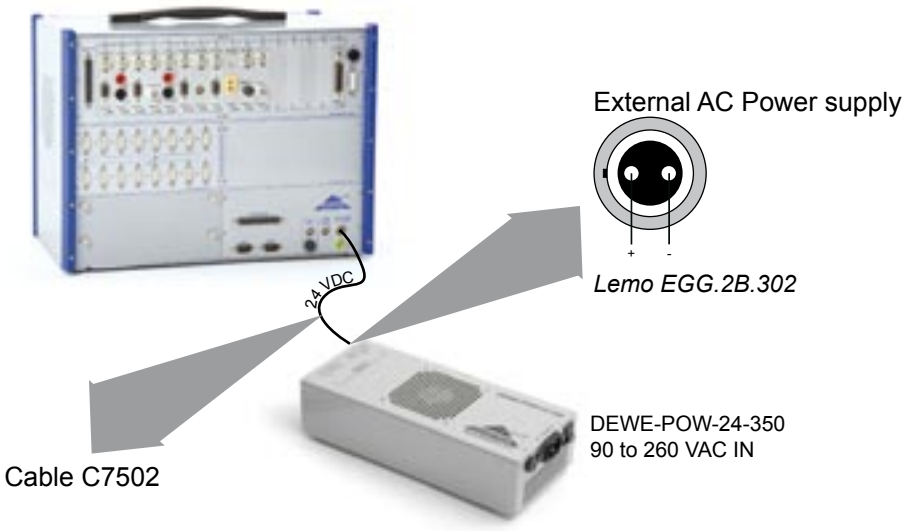
Note: If the system is powered by batteries, please take care that there are at least 2 batteries installed! In some special applications 3 batteries are necessary! (Hot swap of the batteries not possible)

External AC/DC power supply (standard accessory inkluded with option 2600-PS-BAT)

AC/DC power supply	DEWE-POW-24-350
Input:	
Input voltage:	90 to 264 V_{AC} / 127 to 370 V_{DC} universal input
Input frequency:	47 to 63 Hz
Input current (typ.):	2 A @ 230 V_{AC} / 4 A @ 115 V_{AC}
Inrush current (typ.):	44 A @ 230 V_{AC} / 22 A @ 115 V_{AC}
Leakage current:	<2 mA @ 240 V_{AC}
P.F.C. (typ.):	0.95 @ 230 V_{AC} / 0.98 @ 115 V_{AC}
Output:	
Output voltage:	24 V
Min. load:	0 A
Rated load (free / fan):	12.5 A / 14.6 A
Output tolerance:	±2 %
Ripple & Noise (max.):	150 mV
Efficiency (typ.):	88 %
Output connector:	Banana jacks and LEMO EGG.2B.302
Protection:	
Overload:	105 % to 130 % constant current limiting, auto recovery
Over voltage:	26.7 to 32.4 V; Hiccup mode, auto recovery after fault has been removed
Over temperature:	> 80°C ±5°C detect on heat sink of power transistor Shutdown, auto recovery after temp. has fallen
Short curcuit:	Yes
Setup time:	<2000ms @ 230V_{AC} / 4000ms @ 115V_{AC}
Rise time:	<100ms @ 230 V_{AC} / 100ms @ 115 V_{AC}
Holdup time:	16ms @ 230 V_{AC} / 16ms @ 115 V_{AC}
Withstand voltage:	I/P-O/P:3 KV_{AC}, I/P-FG:1.5 KV_{AC}, O/P-FG:0.5 KV_{AC} / 1 minute
Isolation resistance:	I/P-O/P, I/P-FG, O/P-FG: 500 V_{DC} / 100 MOhm
Switching frequency:	100 kHz
Temperature:	
Operating:	-10 to 65°C
Derating:	45 to 60°C: 2 %/°C (3.5 & 5 V: 40 to 65°C: 2 %/°C)
Storage:	-40 to 85°C
Humidity:	
Operating:	20 to 90 % RH
Storage:	10 to 95 % RH (non condensing)
M.T.B.F.:	> 106 K hours (according to MIL-HDBK-217F at 25°C environment)
Safety:	Approved: UL 60950-1 / TÜV EN60950-1
EMC:	
EMI	EN55022 Class B / EN61000-3-2,3
EMS	EN61000-4-2,3,4,5,6,8,11 / ENV50204
Dimensions (W x D x H):	248 x 106 x 62 mm (9.8 x 4.2 x 2.4 in.)
Weight:	1.7 kg (3.7 lbs)

Main System

DEWE-2608 with option PS-BAT and external AC/DC power supply



Smart battery packs

Smart battery packs are equipped with an integrated circuit which stores information (such as manufacturer, serial number, production date etc.) and monitors the current battery status in terms of discharge rate, predicted remaining capacity, temperature, voltage etc. The battery packs, supplied with every battery powered DEWETRON system, are even capable of displaying their charge state without a separate device. With the push of a button, a LED display on the battery pack shows the current charge state in 25% steps. An intelligent battery controller, integrated in our DEWETRON systems, takes care of the charging and discharging process in order to ensure maximum battery performance and life time.

External battery charger (optional)

External battery charger	CH5000A/E/U
Power supply:	
Input voltage:	90 to 260 VAC, 24V
Input current:	2.5 A
Mains Cord:	CH5000E - 220 V European 2-pin connector with ground recess
Dimensions (WxDxH):	180 mm x 92 mm x 58 mm
Weight:	ca. 250 g
Mating connector:	5-blade standard battery connector

From time to time, due to the aging process of the batteries, it is necessary to recalibrate the battery in order to retain the accuracy and reliability of the fuel gauge. This can be archieved with an external battery charger (BAT-CHARGER) which is optionally available. Another advantage of the BAT-CHARGER is that additional batteries can be recharged without being in the measurement unit. This allows the measurement unit to run non-stop without being connected to the power net, thanks to the hot-swap capability of the battery packs.

External DC/DC power supply
(recommended option if system is configured with 2600 PS-BAT power supply)

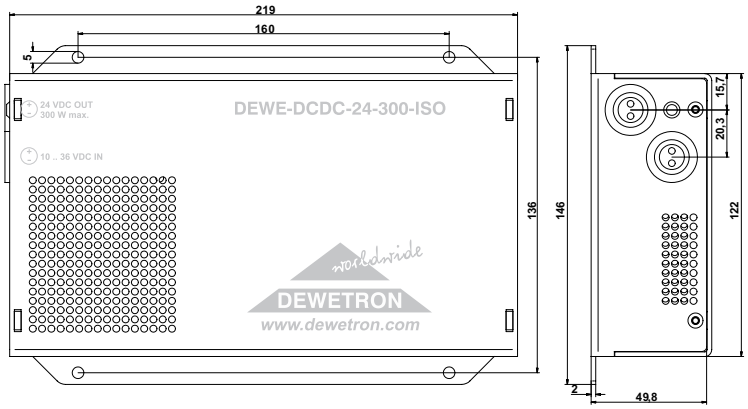
DC/DC power supply	DEWE-DCDC-24-300-ISO
Input:	
Input voltage:	10 to 36 V_{DC} (the input is protected against wrong polarity
Max. input current:	36 A @ 10 V_{DC} input voltage (15 A @ 24 V_{DC})
Input connector:	2-pin LEMO connector male, type: EGJ.2B.302
Output:	
Output voltages:	24 V
Output power:	300 W
Output current:	12.5 A
Output connector:	2-pin LEMO connector female, type: EGG.2B.302
Operating temperature:	-20 °C to 60 °C
Derating above 45 °C:	8 Watt/°C
Isolation voltage:	500 V_{DC}
Status LED:	Green LED indicates an output voltage > 21 V_{DC}
Dimensions: (W x D x H):	approx. 219 x 122 x 50 mm (8.6 x 4.8 x 2 in.)
Weight:	1.3 kg (2.9 lbs)
Power on sequence: First: Connect the system and the DEWE-DCDC-24-300 followed by the power supply connection.	

As an option the DEWE-2608 is shipped with the DEWE-DCDC-24-300-ISO. This power supply serves galvanic isolated voltage with a wide input range from 10 to 36 V_{DC}. The output voltage is fixed with 24 V_{DC} with a maximum output power of 300 W.

Depending on the configuration, the DEWE-2608 takes usually not more than 150 W. The typical power consumption is just around 70 W. However, if the batteries are empty the input current can go up to 12 Ampere which is an equivalent power consumption of 280 Watt! If the unit is supplied from a typical board supply of 12 V it needs an input current of 28 A!

If this high power is not available in the board supply please operate the DEWE-2608 without or with charged batteries.

Dimensions*



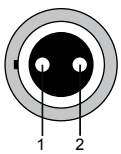
* Dimensions in mm
(1 inch = 25.4 mm)

Input connector

Lemo EGJ.2B.302

Pin assignment
1: 10 .. 36 V_{DC} input
2: GND

Output connector



Lemo EGG.2B.302

Pin assignment
1: 24 V_{DC} output
2: GND

Optional cables: C8502 LEMO 2B jack to banana plugs, 2 m.

Adding or exchanging PCI boards

Installing half-size PCI boards

Step 1:

Figure 1

Remove the back panel, now you can see the card fixing bars for each of the PCI slots.

Step 2:

Figure 2

Remove one card fixing bar per PCI card you plan to install. Loosen the screw nut for the length adjustment of the bar as shown in figure 2.

Then remove 2 screws on the left side and one screw nut on the right side to allow removal of the card fixing bar. Finally remove the bar and after that remove the slot cover.

Step 3:

Figure 3

Now insert the half-length PCI card. You need to insert it at an angle as shown in figure 3. Fix the cards slot cover with one screw.

Step 4:

Figure 4

Check if the longitudinal PCB guide does not collide with any components on your PCI card. This guide supports the cards in case of shocks or vibrations.
If needed move the small guide to a different place to avoid any collision with components. The plastic guide is fixed by 2 screws and there is a row of threads available for adjustment. If no possible place can be found completely remove the plastic guide.

Step 5:

Re-install the card fixing bar. Make sure the plastic pcb guide is properly fitted to the card and then fix the whole bar by the 2 screws on the left side and one screw nut on the right side. Finally seize the screw nut for the length adjustment of the bar (see figure 2).

Now re-install the back panel and you are done.

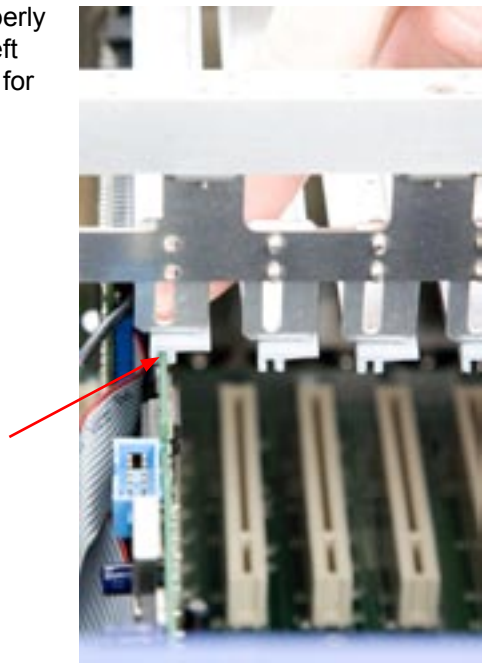


Figure 5

Installing full-size PCI boards

Step 1:

Remove the back panel, now you can see the card fixing bars for each of the PCI slots (see figure 1).

Step 2:

Figure 6

Remove all card fixing bars. Loosen the screw nut for the length adjustment of the bar as shown in picture 2. Remove 2 screws on the left side and one screw nut on the right side of each bar to allow removal.
Also remove the vertical mounting support, 2 crews on the top of the unit and another 2 screws on the backside to divide the support (see figure 6).
Now remove one or more slot covers from the slots you plan to install cards.

Step 3:

Figure 7

Now insert the PCI card(s).
Don´t forget to fix each cards slot cover with one screw.

Step 4:

Check if the longitudinal PCB guide does not collide with any components on your PCI card. This guide supports the cards in case of shocks or vibrations. See figure 4.

If needed move the small guide to a different place to avoid any collision with components. The plastic guide is fixed by 2 screws and there is a row of threads available for adjustment. If no possible place can be found completely remove the plastic guide.

Step 5:

Re-install the vertical mounting support and the card fixing bars. Make sure the plastic pcb guide is properly fitted to each card and then fix each bar by the 2 screws on the left side and one screw nut on the right side. Finally seize the screw nut for the length adjustment of the bar (see figure 2).

Figure 8

Maintenance

External HDD access for easy service

If the system harddisk drive gets damaged, an external HDD access for easy service is available. Pull out the access bay for removing/changing the system harddisk drive.

System performance

Motherboard: see attached manual

Processor:
- ❑ Intel Pentium IV 2.8 GHz
- ❑ Intel Pentium M 1.8 GHz
- ❑

System Memory:

Memory type:
- ❑
- ❑ DDR RAM
- ❑ DDR2-SDRAM (200 pin DIMM)

Size of modules:

❑	❑ 1x	❑ 2x
❑ 1024 MB	❑ 1x	❑ 2x
❑ 2048 MB	❑ 1x	❑ 2x
❑ 3072 MB	❑ 1x	❑ 2x

Harddisk:

Interface:
- ❑ S-ATA
- ❑ ATA-100/133
- ❑ S-ATA RAID

Capacity:
- ❑ 250 GB
- ❑ GB

Removeable HDD:
- ❑ yes
- ❑ no

CD / DVD Drive:
- ❑ DVD +/-RW Writer
- ❑ DVD-ROM / CD Writer

Network connection: ❑ RJ45

Sound:
- ❑ yes
- ❑ no

Main System

Display / Graphic interface

External display:

Size:	19”
Resolution:	1024 x 768 pixel
Touchscreen:	❑ yes ❑ no

Graphic interface:

Bus system:	❑ on board VGA ❑ AGP ❑ PCI ❑ PCI-Express
Video memory:	❑ 32 MB ❑ 64 MB ❑ 128 MB ❑ 256 MB ❑ 512 MB
Connector for external display:	❑ VGA ❑ DVI-I

Keyboard

Keyboard:	83 / 84 keys
Protection:	❑ standard ❑ splash keyboard
Interface:	❑ PS/2 ❑ USB

Standard keyboard

Trackpad / Trackball:

Interface:	❑ PS/2 ❑ USB

Splash keyboard

DEWESoft

DEWESoft Software Turns our Hardware into a Powerful Data Acquisition System

Our award-winning data acquisition package is second to none when it comes to both pure recording power and ease of use. Normally it is a difficult balancing act to provide lots of capability and performance, without making the user interface cumbersome and hard to learn. But with careful and innovative design, we have done exactly that!

The software can act as a simple multi-meter or recorder as well as a sophisticated combustion analyzer or power analyzer. Or anything in between these extremes, like a FFT analyzer, transient recorder, etc.

Over 10 years DEWESoft evolved into a great data acquisition software and is Nr.1 in synchronous acquisition of vastly different signals like analog, digital, CAN, GPS, PCM, counter, video, etc. In 2010 with the release of version 7, DEWESoft takes a big step toward become a very powerful data analysis tool for a wide range of test & measurement applications. Since many years you can utilize math channels in the measure mode for online calculations. Starting with version 7.0, captured data can be re-calculated in the analyze mode using the large suite of calculation (math) functions available in the measure mode. This eliminates the CPU performance limitations and thus provides unlimited offline calculation power.

Key Features of DEWETRON systems running DEWESoft

- *Fast and easy setup*
- *Perfect sync of vastly different signals like analog, digital, counter, CAN, XCP, GPS, Video, ARINC, 1553, etc.*
- *Powerful online data processing, MATH functions, filters, statistics, reference curves*
- *Attractive online display of all kind of data, creation of displays is a matter of seconds*
- *Analog, digital or CAN data output; powerful function generator, alarms, CAN messages*
- *Build test procedures in a form of workflow diagram by means of sequencer*
- *Fast data analysis, reload GByte files in seconds*
- *Post processing, large suite of calculation (math) functions*

Example: Performing a 10th order notch filter on 128 channels being sampled at 200 kS/s each. This is not possible online. But in analyze mode it´s easy. Simply record the data and then filter it afterwards (math functions are non-destructive, i.e., they do not affect the raw channels).

Another important new feature is the sequencer which provides a way to automate test procedures.

DEWESoft

Hardware Support

DEWESoft supports all DEWE-ORION series A/D cards as well as some third-party cards, like Spectrum cards for transient recording. Multiple cards of the same family are supported for high channel counts.

In front of the A/D cards typically comes signal conditioning units, and there is a huge range of DEWETRON conditioners which are all perfectly implemented into the software.

Besides the analog inputs DEWESoft supports the digital I/Os, counters and CAN interfaces of the DEWE-ORION series cards.

To acquire video streams in sync with the analog data there is a selection of DEWE-CAM cameras.

Further bus systems like PCM telemetry, XCP, ARINC, 1553, etc. are supported, too. DEWETRON offers the appropriate hardware for all of these.

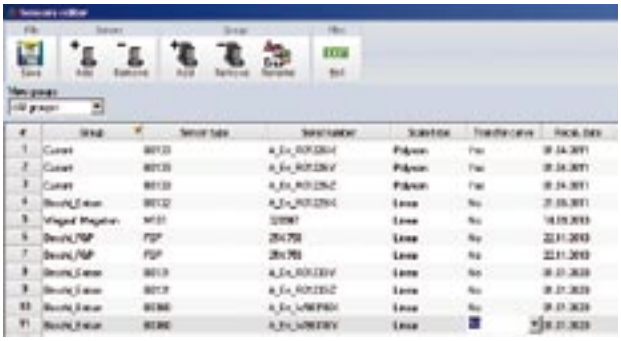
For position and speed measurements there is a choice of high performance DEWE-VGPS sensors. Or use low-cost sensor which is NMEA compatible for simple position plotting and mapping applications.

DAQx modules

DEWE-ORION A/D cards

Sensor Database and TEDS (Technical Electronic Data Sheet)

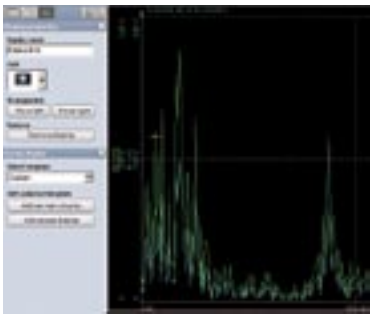
The DEWESoft data acquisition software suite was developed especially for measurement technicians, thus simple sensor "connection" is a major topic. Basic settings like sensor setup are easily done. TEDS technology of newer sensors is supported on both the hardware and software side, so that all settings follow automatically, preventing user errors and saving a huge amount of time. For sensors without TEDS, there are numerous options for manual scaling as well as an integrated sensor database to make settings as efficient as possible.



Video Recording

A camera is a perfect sensor for many applications and a lot of people like to use it in their data acquisition. Video is a useful test documentation, providing a visual record of the test conditions and setup. I can also be used for more in-depth analysis, as you can imagine. There is nothing quite like seeing your data replayed with synchronized video – this DEWETRON innovation provides a whole new level of context and understanding of your test data than you could ever imagine.

3D Graph

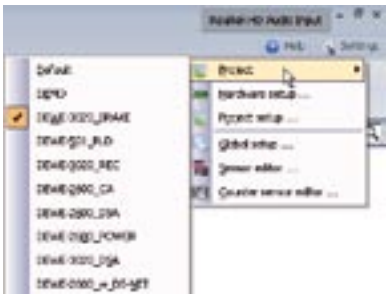


In the properties panel there is a function that allows you to edit the properties of the selected display, and to create new displays, and rearrange them. You can rename any display, and select a different icon for it. Of course you can add sub-displays to any main display.

Display Screens

One of the most powerful and yet easy to use aspect of DEWESoft is the creation of displays. Of course a few standard displays like Recorders, Oscilloscope, FFT, Meters, Bars, 2D and 3D graphs, etc. are built-in for you. But this is only the beginning. You simply can create custom displays according to the needs of specific test.

Project Setup



The project files setup the measurement instruments in seconds including complete hardware setup, measurement configuration, and sensor calibration.

Since DEWESoft version 7 you can create "Projects" at the hardware setup screen level, where each project contains all of the settings for any hardware that you own. You can have an unlimited number of hardware setups, which you can freely name and edit. When you start DEWESoft 7, it will automatically load the last hardware setup that you used, of course … but if you have changed the hardware, you can simply choose a different project from the "Settings" menu, and a completely different hardware setup will be loaded.

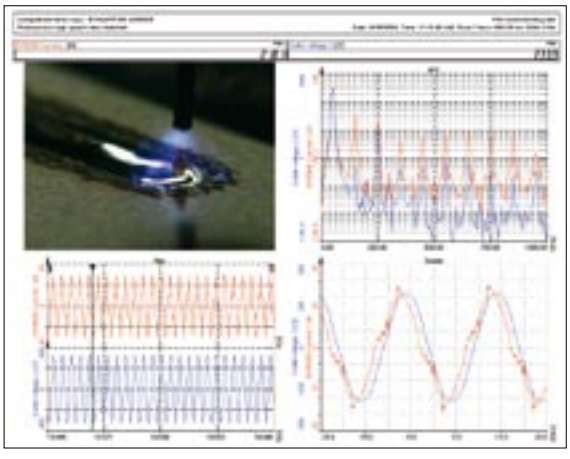
Even when using the same hardware, projects allows using different folders for setup, data and exported files. So you can create John and George projects for different users and work without interfering or you can create e.g. Road-Load and DSA projects for different tasks.

Recording

You can control recording as simple as pressing the START, STORE and STOP buttons. But there are also versatile trigger options to e.g. only store data if a trigger event occurs or to store at a slow rate usually but store at a fast rate at a trigger event with definable pre- and post times.

There is a large suite of calculation (math) functions which can be applied to any channels.

Analyze – Replay, Re-calculate, Export



In Analyze mode you can replay any captured data file, zoom in, make cursor measurements, print reports and export the data to a wide variety of formats, like Flexpro, Excel, Matlab, Diadem and many more.

Since version 7 all the powerful math functions such as math formulas, filtering, statistics, power analysis, frequency response function, order tracking, torsional vibration, engine combustion analysis, sound analysis, human vibration analysis, and others can also be applied off-line to captured data. So you can simply store the raw data and do all the processing off-line, on any computer, anywhere. This allows you to work with the data as you were at the test bench or on the proving ground.

Notes

CE-Certificate of conformity

CE

Manufacturer:

DEWETRON Elektronische Messgeraete Ges.m.b.H.

Address:

Parkring 4
A-8074 Graz-Grambach Austria

Tel.: +43 316 3070 0
Fax: +43 316 3070 90
e-mail: sales@dewetron.com
http://www.dewetron.com

Name of product: **DEWE-2608**

Kind of product: *Data acquisition instrument*

The product meets the regulations of the following EC-directives:

73/23/EEC
"Directive on the approximation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits amended by the directive 93/68/EEC"

89/336/EEC
"Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility amended by the directives 91/263/EEC, 92/31/EEC, 93/68/EEC and 93/97/EEC

The accordance is proved by the observance of the following standards:

LV	**Safety**	IEC/EN 61010-1:1992/93 IEC/EN 61010-2-031	IEC 61010-1:1992/300 V CATIII Pol. D. 2 IEC 1010-2-031
EMC	**Emissions**	EN 61000-6-4	EN 55011 Class B
	Immunity	EN 61000-6-2	Group standard

Graz, October 14, 2008

Place / Date of the CE-marking

Dipl.-Ing. Roland Jeutter / Managing director

Notes