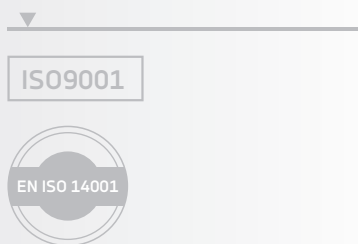

DEWE-DCDC-24-400-ISO

TECHNICAL REFERENCE MANUAL

WELCOME TO THE WORLD OF DEWETRON!

Congratulations on your new device! It will supply you with accurate, complete and reproducible measurement results for your decision making.

Look forward to the easy handling and the flexible and modular use of your DEWETRON product and draw upon more than 25 years of DEWETRON expertise in measurement engineering.



CUSTOMIZED



MODULAR



COMPETENT



COMMITTED



APPROVED

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Training

DEWETRON offers training at various offices around the world several times each year. DEWETRON headquarters 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/trainingsclasses>

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 headquarter. 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 GmbH
Parkring 4
8074 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

Only the team of DEWETRON is allowed to perform 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.



Any spare parts (screws, backplanes, cables,...) must be obtained from DEWETRON only.



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 GmbH
Parkring 4
A-8074 Grambach / Austria

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Printing History

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Safety conventions



Observe precautions for handling electrostatic sensitive devices!



This icon denotes a caution, which advises you of precautions to take to avoid injury, data loss, or a system crash. When this symbol is marked on the product, refer to the technical reference manual.



Indicates hazardous voltages.



Indicates the chassis terminal

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.*

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. If the unit is used in a manner not specified by the manufacturer the protection can be impaired!
- > This product is intended for use in industrial locations. As a result, this product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interferences to the reception of radio and television broadcasts.
- > 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 refer 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 circuits of category II, III and IV. The measurement category can be adjusted depending on module configuration.
- > 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.
- > Supply overvoltage category is II.
- > 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.
- > 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.

SAFETY INSTRUCTIONS

- > The whole system must not be changed, rebuilt or opened (except for changing TRION™ 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 connectors 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 TRION™ modules.
 - > 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 $>25 V_{AC}$ or $>35 V_{DC}$! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
 - > Maximum input voltage for measuring cards are $70 V_{DC}$ and $46.7 V_{PEAK}$
 - > 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 circuits 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 refer 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 be charged, even the system has been removed from the power supply.

SAFETY INSTRUCTIONS

- > Direct exposure of any DEWETRON product to strong sunlight or other heat radiation shall be prevented, as this could excessively heat up the product and lead to permanent damage of the product.
- > The electrical installations and equipments in industrial facilities must be observed by the security regulations and insurance institutions.
- > The use of the measuring system in schools and other training facilities must be observed 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 refer 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.

Maintenance

The information in this section is designed for use by qualified service personal.

Service interval:

Clean dust from the chassis exterior/interior and exchange filter foam based on the operating environment.

Cleaning:

Clean surface of the chassis with dry lint-free cloth.

Use a dry velocity stream of air to clean the chassis interior.



- > Disconnect all cables before servicing the unit!
- > Many components within the chassis are sensitive to static discharge damage. Always wear a ground wrist strap and service the unit only in static-free environment.
- > Do not use harsh chemical cleaning agents!

GENERAL INFORMATION

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 information about recycling on the DEWETRON website www.dewetron.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment, and is outside the scope of the 2011/65/EU RoHS Directive. This product is known to contain lead.

DEWE-DCDC-24-400-ISO

DEWE-DCDC-24-400-ISO

- > Galvanically isolated power supply input box
- > Wide input voltage range
- > 400 W output power

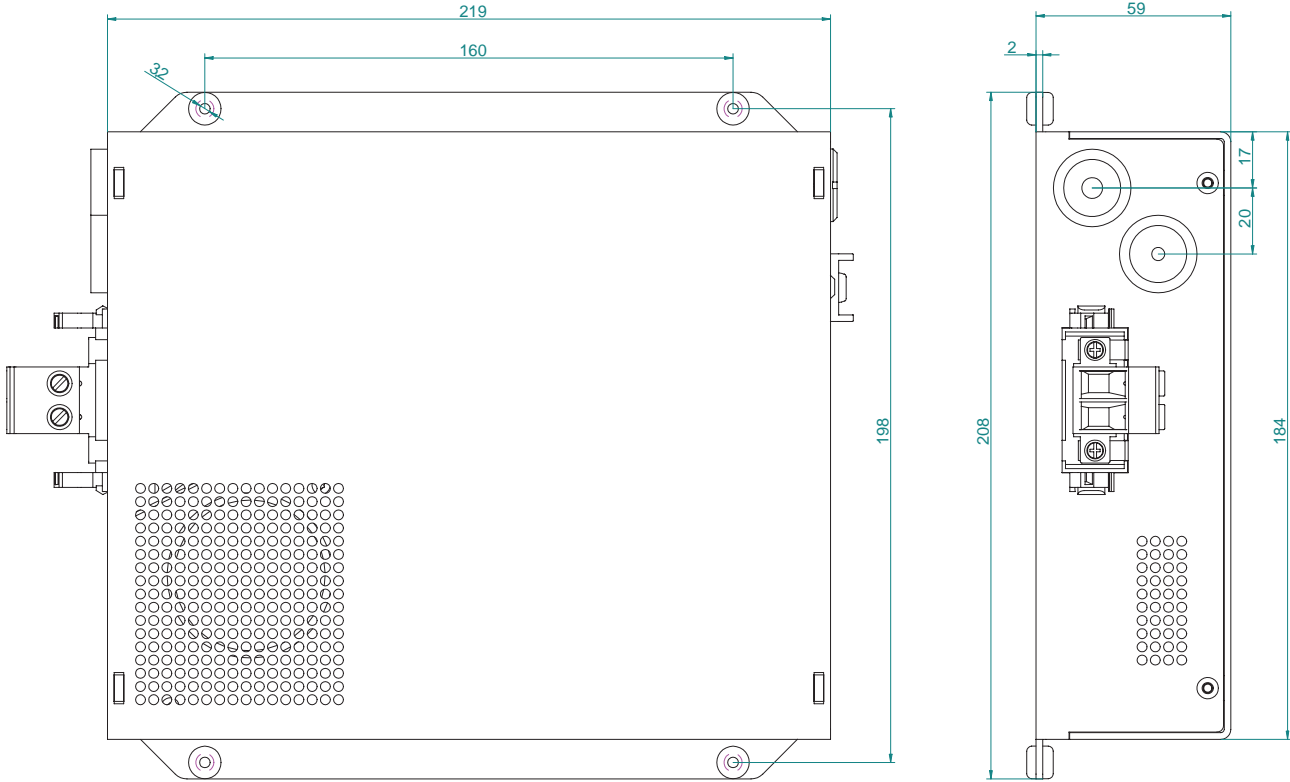


System specifications

DEWE-DCDC-24-400-ISO	
Input	
Rated input voltage	11 to 32 V _{DC} (max. 10 to 36 V _{DC}), input is protected against wrong polarity
Max. input current	46 A @ 10 V _{DC} (20 A @ 24V _{DC})
Input connector	MultiContact ID/B6AR-N-S, MultiContact ID/S6AR-N-S and 2-pin phoenix screw terminal type 1703771 (18-6 AWG, max. 16 mm ²)
Output	
Output voltage	24 V _{DC}
Output power	400 W
Output current	16.6 A @ 400 W
Output connector	2-pin female LEMO connector (EGG.3B.302)
Operating temperature	-20 °C to 50 °C
Isolation voltage	500 V _{DC}
Status LED	Yes, green LED indicates an output voltage >21 V
Dimensions (W x D x H)	approx. 219 x 184 x 59 mm (8.6 x 7.2 x 2.3 in.)
Weight	2 kg (4.4 lbs)
Power on sequence	First connect the system and the DEWE-DCDC-24-400-ISO box followed by the power supply connection.

DEWE-DCDC-24-400-ISO

Dimensions *



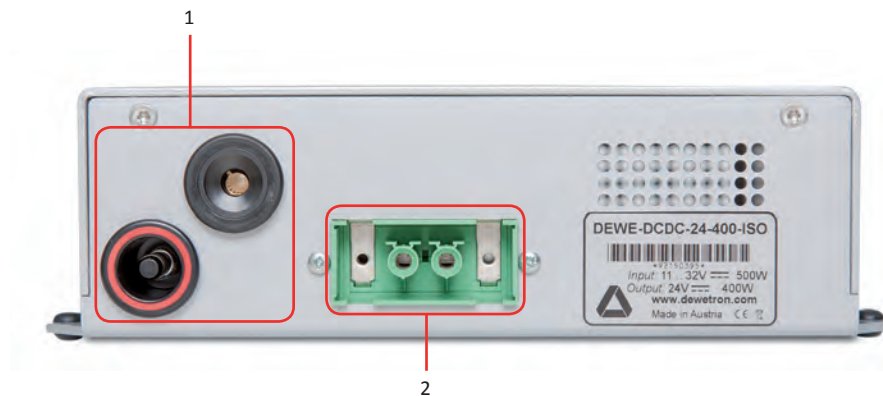
* Dimensions in mm
(25.4 mm = 1 inch)

DEWE-DCDC-24-400-ISO

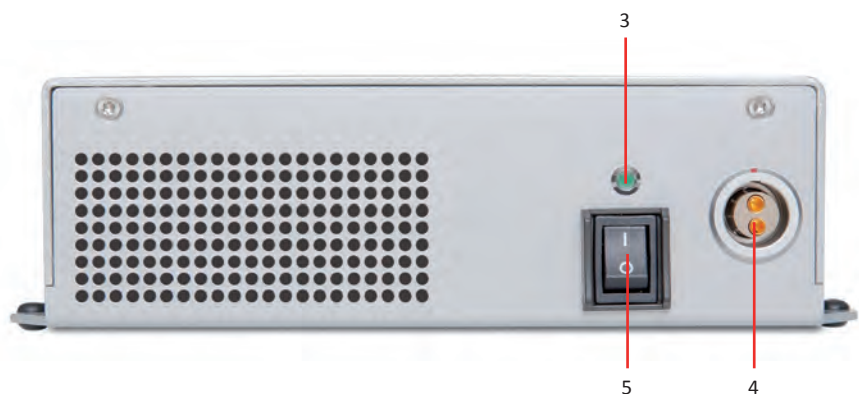
DEWE-DCDC-24-400-ISO at a glance

The DEWE-DCDC-24-400-ISO is a galvanically isolated power supply input box with a wide rated input range from 11 to 32 V_{DC} (max. 10 to 36 V_{DC}). The output voltage is fixed at 24 V_{DC} with a maximum output power of 400 W. The voltage input is either done via MultiContact connectors or a 2-pin Phoenix screw terminal.

Typical DEWE-DCDC-24-400-ISO left side view



Typical DEWE-DCDC-24-400-ISO right side view

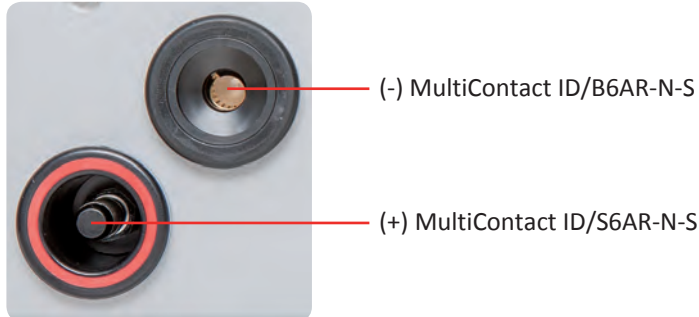


- 1 Input connectors (11..32 V_{DC}, MultiContact)
- 2 Input connector (11..32 V_{DC}, Phoenix screw terminal)
- 3 Status LED
- 4 Output connector (24 V_{DC}, max. 400 W)
- 5 Power-on switch

DEWE-DCDC-24-400-ISO

1 Input connectors (MultiContact)

The DEWE-DCDC-24-400-ISO supports two MultiContact connectors for voltage input (11 .. 32 V_{DC}). The input is protected against wrong polarity.

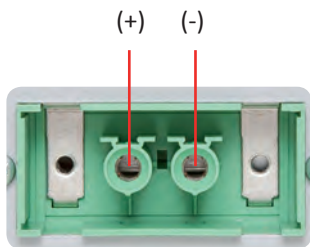


Standard accessory

4 m, 6 AWG cable to connect to a car battery.

2 Input connector (2-pin Phoenix screw terminal)

The DEWE-DCDC-24-400-ISO also supports a 2-pin Phoenix screw terminal for voltage input (11 .. 32 V_{DC}). The input is protected against wrong polarity.

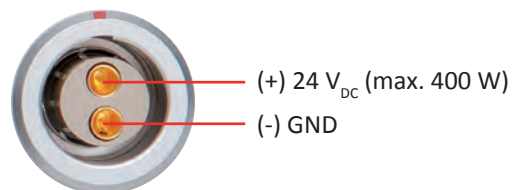


3 Status LED

The Status LED indicates an output voltage >21 V_{DC}.

4 Output connector

The DEWE-DCDC-24-400-ISO supports an output voltage of 24 V_{DC} and a total output power of max. 400 W @ 16.6 A.



LEMO EGG.3B.302

5 Power-on switch

The power-on switch is used to power on the device.

CE-CERTIFICATE OF CONFORMITY



Manufacturer:

DEWETRON GmbH

Address:

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8074 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-DCDC-24-400-ISO

Kind of product:

Isolated power supply box

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

2006/95/EC

"Directive on the approximation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits."

2004/108/EC

"Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility amended by the directives 89/336/EWG."

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

L V E M C	Safety	IEC 61010-1:2011 300 V CATII, Pol. Deg. 2	
	Emissions	EN 61000-6-4	EN 55011 Class B
	Immunity	EN 61000-6-2	Group standard

Graz, December 11, 2015

Place / Date of the CE-marking

Ing. Thomas Propst / Manager Total Quality



NOTES