# DEUTRONIC



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# 







# Content



# Power electronics for



Charging Technology



Transportation



Logistics



**Test & Automation** 



+ MORE

The demands on today's electronics are various. Talk to us about it.

We master your challenges. Your success is our drive.

# Deutronic – Manufacturer of your Power electronics



# A very warm welcome to the world of Deutronic!

As a globally established partner to industry, Deutronic develops and manufactures intelligent power electronics and test systems of the highest quality.

The particular strength of an ownermanaged family business lies in the realization of application-specific special devices and customized solutions also for smaller quantities.

Deutronic was founded in 1983 in Adlkofen near Landshut / Lower Bavaria. Now in its second generation, the family-run company is 100% family-owned. True to the company motto "Power + More", Deutronic offers its customers innovative complete solutions with added value.

Other Deutronic locations are in the Czech Republic (Cicenice), the USA (Spartanburg) and in China (Shenzhen).

A qualified, worldwide service network takes care of maintenance, repair, exchange of products, of the delivery of spare parts as well as of the commissioning of systems.

Of course, we are available to you at any time. Please feel free to contact us regarding customized individual solutions.



# We charge you up!

Modern vehicles include multiple electrical and electronical components. Many onboard networks possess more than 100 control devices that must be powered.

These highly complex and sensitive onboard networks, combined with high currents, have a wide range of requirements for charging technology to meet.

As technology and market leader in automotive charging technology, Deutronic is the manufacturer worldwide who masters this demanding task even under adverse circumstances, e.g. in vehicle production. Hardware and software are optimally and individually adjusted to the respective application and guarantee highest security and reliability.

production, workshops and showrooms.

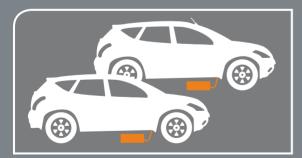
Deutronic charging computers have proven their worth a thousand times and thus have been in use by leading OEMs worldwide for decades.

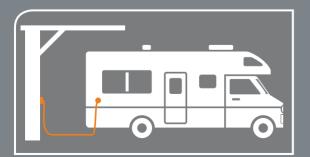
An absolute interconnectivity with our "DC-Connect" offers a multitude of possibilities: From real time monitoring or remote control to the downstream analysis and processing of all saved data. This means that the applications are almost limitless.











## Assembly line

Our robust and powerful charging computers are concepted and developed specifically for the needs and processes in automotive assembly. Even in the early production phase, the on-board network is supplied reliably and powerfully without a battery.

# **Final assembly**

In the final assembly our charging computers guarantee fully charged batteries and 100% safety for employees and on-board electronics.

# Workshop

We provide a wide product range, which is ergonomically and technologically specifically designed for the harsh conditions in the workshop. Our powerful, robust and durable products make us the preferred choice of professionals worldwide.

# Showroom

Our battery charging computers for showrooms are discretely placed under the vehicle and enable the permanent use of light and entertainment systems for demonstration purposes.

# Trickle charging

The Batteries of cars, boats, campers and motorcycles often need special attention and care because of long standing times or hibernation. In this area, Deutronic also sets standards for gentle, adaptive charging processes as well as automatic detection of different battery chemistries. The DBL series stands for powerful charging computers for the industrial use in the production line, for rework stations as well as in car workshops.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DBL800-14	100–240VAC	14,4/13,2VDC	45A/54A Boost	107056/x/yyy*
DBL800-14-B	100–240VAC	14,4/13,2VDC	45A/54A Boost	107061/x/yyy*
DBL800-58-M	100–240VAC	max. 58VDC	11A/14A Boost	107088/x/yyy*
DBL1200-14	100–240VAC	14,4/13,2VDC	80A/90A Boost	107073/x/yyy*
DBL1200-14-B	100–240VAC	14,4/13,2VDC	80A/90A Boost	107075/x/yyy*
DBL1200-28	100–240VAC	28,8/26,4VDC	40A/45A Boost	107074/x/yyy*
DBL1200-28-B	100–240VAC	28,8/26,4VDC	40A/45A Boost	107098/x/yyy*
DBL1600-14	100–240VAC	14,4/13,2VDC	90A/105A Boost	107063/x/yyy*
DBL1600-14-B	100–240VAC	14,4/13,2VDC	90A/105A Boost	107068/x/yyy*
DBL1200/3W-14-B-HAN	3AC 380–500VAC	14,4/13,8VDC	80A/90A Boost	107200/x/yyy*
DBL1600/3W-14-B-HAN	3AC 380–500VAC	14,4/13,8VDC	90A/105A Boost	107201/x/yyy*
DBL1800/3W-14-B-HAN	3AC 380–500VAC	14,4/13,8VDC	100A/120A Boost	107077/x/yyy*
DBL2250/3W-14-HAN	3AC 400VAC	14,4/13,8VDC	100A/150A Boost	107229/x/yyy*
DBL3000/3W-14-HAN	3AC 400VAC	14,4/13,8VDC	150A/200A Boost	107228/x/yyy*

\* x Accessory variant

y Setting (Standard setting or customized)



#### DBL800/1200/1600 Standard







 Pb / Li charging modes, suitable for all types of 12V lithium (LiFePO<sub>4</sub>) and lead-based (wet chemical, Ca/Ca, AGM, EFB, GEL) batteries

#### Modes:

- Automatic detection external power supply, charging (AutoMode)
- Automatic Pb/Li-detection (AutoDetect)
- Cable compensation
- Mode to connect deeply discharged LiFePO<sub>4</sub> batteries again (PowerUp)
- Takeover of the charging components with parallel supply e.g. DC/DC converter in the vehicle (HoldAndBuffer)
- Quality and reliability based on decades of experience
  - 100 % safe for on-board electronics and airbags
  - Extensive protection for device, vehicle and employees
  - Extremely durable design with fanless housing

#### Individualization and flexibility

- Customer-specific software and charging parameters
- Interconnectivity with DC Connect

The SmartCharger series was especially designed for charging and monitoring lithium (LiFePO<sub>4</sub>) and lead-based 12V batteries.

The series stands for robust battery chargers with adaptive charging and monitoring algorithms especially for the use in car workshops and showrooms.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
SC300-14	100–240VAC	14,4/14,0VDC	20A	107143/20/000
SC500-14	100–240VAC	14,4/14,0VDC	35A	107142/20/000







 ✓ For all types of 12V lithium (LiFePO₄) and lead-based (wet chemical, Ca/Ca, AGM, EFB, GEL) batteries

Modes:

Automatic detection external power supply, charging (AutoMode)

Cable compensation

- Mode to connect deeply discharged LiFePO<sub>4</sub> batteries again (PowerUp)
- Takeover of the charging components with parallel supply e.g. DC/DC converter in the vehicle (HoldAndBuffer)
- Automatic switching between charging, power supply and buffer (LTC)

✓ Visually discreet

- Very flat design and extra small charging clamps
- Adapter plug as breakaway coupling and for easy passage through the engine compartment
- Quality and reliability based on decades of experience
  - 100 % safe for on-board electronics and airbags
  - Extensive protection for device, vehicle and employees
  - Extremely durable design with fanless housing

The DBL1200HV is an intelligent conditioning and diagnostic system for HV-batteries, which is suitable for the special requirements in e-mobility.

Technical data				
Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DBL1200HV-60	100–240VAC	25–67,2VDC	20A	After project planning

# High voltage mobile charging station DBL11.22-HV-LW Mobile charging station

The DBL11.22-HV-LW as high voltage mobile charging station especially for e-mobility can charge vehicles via Type2. The compact design enables a wide range of applications.

**Technical data** 

Туре	AC input	AC output	ArtNo.
DBL11-HV-LW (1 m mains cable length)	400V/3~ 16A	11kW	140564
DBL11-HV-LW (5 m mains cable length)	400V/3~ 16A	11kW	140565
DBL22-HV-LW (1 m mains cable length)	400V/3~ 32A	22kW	140566
DBL22-HV-LW (5 m mains cable length)	400V/3~ 32A	22kW	140567



# DBL1200HV

- Conditioning of single modules of an HV battery system to a desired charging level, charging power max. 1200W, discharging power 120W
- Automatic detection of the number of cells of the battery module
- Single cell voltage monitoring
- Cell temperature monitoring
- ✓ Detection of defective cells
- ✓ Additional functionality available on request



- Output AC Type 2, versions from 11kW to 22kW
- Residual current device RCD Type B, 30mA AC, 6mA DC
- ✓ Robust design (metal housing, IP54)
- ✓ Flexible use, outdoor use possible

# Charging Technology

The increasing economic and technical demands on flexibility and reliability rise with the complexity of industrial plants. Due to its retrofittability, the Deutronic D-IBM2900 energy buffer is predestined for use in a wide variety of areas or industries and enables optimization in terms of sustainability thanks to its diverse flexibility and adaptation potential. In addition, it can be used as a backup solution to avoid cycle delays, idle times or downtime in industrial environments. In this way, the use of the product makes a decisive contribution to reducing time, costs and risks – while at the same time increasing performance.

The D-IBM2900 convinces with a capacity of 2900 mAh and can be used mobile as well as stationary. Compatibility with Deutronic DBL three-phase chargers (DBL1200/3W, DBL1600/3W and DBL1800/3W) makes Deutronic your problem solver in the field of decentralized power supply. Ensuring an uninterrupted power supply, it can even be implemented in outdoor areas due to the classification in protection class I and in combination with the corresponding charging trolley Deutronic offers a convenient overall package. Also for customers with the focus on lean management and continuous improvement, the energy buffer is the ideal solution due to its flexibility.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
D-IBM2900 1AC	95–240VAC wide range	410–550VDC	Max. 5A	107483
D-IBM2900 3AC	3 x 200–500VAC with tolerance range 187–550VAC	410–550VDC	Max. 5A	107482





- Ensuring an uninterrupted power supply in the industrial plant area
- Autonomous battery system with internal BMS (single cell monitoring) and emergency stop
- Backup solution to avoid delays in the industrial environment
- Two redundant safety shutdowns
- Reduced vehicle and manufacturing times
- Rugged construction meets protection class I requirements



- Mobile loading unit enables flexible supply in vehicle fleets or rework stations
- Autonomous battery system with internal BMS (single cell monitoring) and emergency stop
- Two redundant safety shutdowns
- LED display for visual indication of remaining energy
- Use as part of continuous improvement processes or short-term adaptations
- Compatibility with Deutronic DBL three-phase chargers (DBL1200/3W, DBL1600/3W and DBL1800/3W)

The ESM5 is a solar module with an integrated charge controller for maintaining 12VDC rechargeable batteries.

Long lifetimes after production and transport as well as increasing standby-power consumption of new cars often lead to a discharge of the vehicle battery.

The ESM5 Solar-Battery-Maintainer-System prevents a deep discharge of the battery causing a massive increase of the battery lifetime. The current state of charge of the battery is indicated on the front side of the ESM5 at any time via LEDs.

# TypeInput voltageOutput voltageMax. output<br/>currentArt.-No.ESM5I14,2VDCmax. 600mA116198







- Solar module with integrated charge controller for 12VDC Lead/AGM/Lithium/gel based rechargeable batteries
- Processor controlled charging
- 🖌 Robust solar module
- ✓ Aluminium / plastic sandwich carrier plate
- ✓ Only 5 mm thick (without charge controller)

# Charging Technology – Accessories Extract

# Transport system (multifunctional)



- Transport system with mounting device for two DBL in B housing and signal lamps
- Transport system with mounting device for two DBL2250/3W resp. DBL3000/3W and signal lamps
- Transport system with mounting device for D-IBM2900 energy buffer system as well as two DBL/3W or -B and signal lamps
- Variant 1: For DBL chargers in standard housing
- Variant 2: For DBL chargers in B-housing



External signal lamp

- External signal lamp for charging computers of the DBL series
  - For clear signaling of the charging status on production lines and workshops
  - Available with 0.5 m or 2.5 m cable length
  - Optionally available with or without acoustic signalling





- Adaptive filter box to meet ILA EMC requirement on DBL devices
- ✓ Retrofittable on existing DBL devices
- Suitable for DBL1050-14, DBL1200-14 and DBL1600-14



- 🖌 Wallmount
- Software D-Tool Parameterization tool MPC4
- Cable spring balancer with locking device

# **DC-Connect** Networking of smart Deutronic products

#### Modular design, simple and clear user interface, individually adaptable



- Microsoft Windows<sup>®</sup> user interface
- ✓ Division of a plant into different areas possible
- Customized signalling of different equipment status reports
- Definable tabs for the presentation of relevant parameters
- Graphical representation of the measured values over a limited period



- ✓ Read the current device configuration
- Parameterizing of single or multiple devices
- ✓ Controlling of single or multiple devices



- Allows a downstream analysis of the measured values
- Graphically appealing preparation
- Extensive zoom and configuration functions
- Export to other data processing programs





- Maintenance information stored in the device can be read out
- ✓ Update possibilities of single or multiple devices



Enables integration into e.g. a SIMATIC WinCC<sup>®</sup>
 System via OPC interface

 Output
 Output

 Destronic Transportation offers a wide spectrum of DC/DC converters for the use in harsh environments, electro and hybrid

#### Be excited!

With electrified vehicles, electronic components like high-voltage energy storages, electro motors etc. play an important role. The use of different on-board voltages depending on the grade of electrification of the application and the constantly rising power requirements increase the complexity of the application.

As a partner with tens of years of experience and competence, Deutronic offers a wide spectrum of DC/DC converters for different applications.

Our latest generation of DC/DC converters features an innovative and compact design combined with high

power density. The converters are controllable via CAN and individually applicable to the communication protocol of the customer's application.

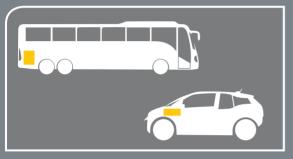
All galvanically isolated and not isolated converters are very robust and perfectly protected against rough environmental influences like vibration, shock, high temperature differences, humidity and aggressive atmosphere.

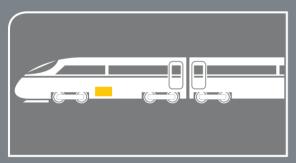
Due to our in-house production, customer-specific changes are possible even for small series.

# Transportation









# Mobile working machines

Our powerful DC/DC converters are used in different construction machines and agricultural vehicles of different kinds, also in the e-versions.

# Electro and hybrid vehicles

For hybrid and electro vehicles electronic components, e.g. HV energy storages, e-machines etc. are significant. Our DVCH converters meet the requirements occurring in a vehicle and also impress with extremely small construction volumes and high efficiency.

# Railway

In the highly specialized railway sector, we are able to meet the high requirements and provide the fitting DC/DC converter for our customers. The DVCH converters meet the requirements occurring in a vehicle and also impress with extremely compact design and very high efficiency.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVCH1503-400-12	200–470VDC	2–15VDC	112A	105193/x/yyy*
DVCH1503-400-24	200–470VDC	2–30VDC	56A	105192/x/yyy*
DVCH1503-700-12	400–900VDC	2–15VDC	112A	105195/x/yyy*
DVCH1503-700-24	400–900VDC	2–30VDC	56A	105194/x/yyy*
DVCH3003-400-12	200–470VDC	2–15VDC	224A	105197/x/yyy*
DVCH3003-400-24	200–470VDC	2–30VDC	112A	105196/x/yyy*
DVCH3003-400-48	200–470VDC	4–60VDC	56A	105184/x/yyy*
DVCH3003-700-12	400–900VDC	2–15VDC	224A	105199/x/yyy*
DVCH3003-700-24	400-900VDC	2–30VDC	112A	105198/x/yyy*
DVCH3000-555-13.8	400-800VDC	13,8VDC	216A	101344/x/yyy*
DVCH3000-555-28	400-800VDC	28VDC	108A	101345/x/yyy*
DVCH3000-555-55.2	400-800VDC	55,2VDC	54A	101349/x/yyy*

#### \* Order option:

.../x/...: Accessory variant .../0/... without accessory .../20/... with heatsink More on request .../yyy: Setting (Standard setting or customized)

.../000 DC-Standard CAN 2.0A .../001 DC-Standard CAN J1939 Customer-specific parameterization on request

# Transportation





- ✓ Power range 1500/3000W
- Available CAN protocols: Standard-CAN and J1939
- ✓ Protection classes IP65, IP67 and IP6K9K
- Contact cooled, no extensive cooling concept in the vehicle required
- Customized changes possible through modular design
- HV connection cable or supplementary heat sinks available as accessories

The latest generation of DC/DC converters for electromobility – also in fuel cell applications – enables a high power density and current carrying capacity with a very flat design using planar components.

#### Technical data

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVC153-24/36-12	36VDC	12,5VDC	12A	105173/x/yyy*
DVC153-48-12	48VDC	12,5VDC	12A	105174/x/yyy*
DVC153-80-12	80VDC	12,5VDC	12A	105175/x/yyy*
DVC453-24/36-24	24–36VDC	24,3VDC	18,5A	105176/x/yyy*
DVC453-48/80-24	48–80VDC	24,3VDC	18,5A	105177/x/yyy*
DVC953-48/80-13,8-CAN	48–80VDC	2–16VDC	80A	105185/x/yyy*
DVC853-48/80-13,8	48–80VDC	13,8VDC	70A Boost 160A (t<=4s)	105149/x/yyy*
DVC1903-48/80-24	48–80VDC	24,3VDC	70A Boost 160A (t<=4s)	105178/x/yyy*

\* x Accessory variant

y Setting (Standard setting or customized)

#### Especially for rail applications

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVC75-80-24/RA	80VDC	24,5VDC	3,2A	105048
DVC75-80-24/RA	80VDC	24,5VDC	3,2A	105048/2
DVC150-80-24/RA	80VDC	24VDC	6,5A	105047
DVC251-80-24/RA	80VDC	24VDC	10,5A	105137/1

# **Transportation**





- ✓ Power range 150–1900W
- Conduction cooling no extensive cooling concept needed
- Extremely compact design (planar technology), dry design (electrolyte-free)
- Available CAN protocols: Standard-CAN and J1939
- ✓ Protection classes IP54, IP65
- Customized changes possible
- Connecting plugs and cables available as accessories



# **Transportation – Accessories** Extract

# Mating connector DVC453-48/80 pre-assembled



- For the device type:DVC453-48/80-24
- ✓ 3 m cable length
- Scope of delivery: Mating connector TE Connectivity AMP and 3 m connection cable



- For the device type: DVC953
- 2 m cable length
- Scope of delivery:
   Power Lok connection
   Twin cable Ölflex 2x6 mm<sup>2</sup>
   Open cable ends

#### HV mating connector DVCHx3 pre-assembled



- For the device types:
   DVCHx3
- ✓ 5 m cable length
- Scope of delivery:
   2 pole HV connector AMPHENOL
   Excel Mate Eco HVSL282 06 2 A 104
   HV cable (4 mm<sup>2</sup>, shielded single wires)

# **Transportation**





- For device types:
   DVCx3, DVCHx3/Adapter-Kit
- ✓ Scope of delivery:
  - 1x D-ADAPT-CAN USB/CAN-ADAPTER For update of Deutronic series DVCx3 and DVCHx3 by means of CAN bus Variants: DVC853/953, DVC1903, DVCH1503 and DVCH3003 Protocols: CAN2.0A/J1939
- 1x ServiceTool OCT
   PC tool for updating firmware / device parameters
   Documentation
- 1x Accessories-SET
   USB cable: USB-A male/USB-B mini male, length 1.5 m
   DVCx3 CAN data cable: 9-PIN Sub-D (plug/socket), length 3 m
   DVCHx3 CAN data cable: 9-PIN Sub-D (socket)/AMPSEAL 14-PIN, length 2 m



- Heat sink incl. mounting plate and fixing material for mounting on DVCHx3 units
- ✓ Heat sink lengthwise
- Heat sink crosswise
- For DVCx3 units
   On request



We keep you running!

Automated intralogistical system cannot afford standing times. Our robust industry power supplies provide highest reliability even under harshest operating conditions. We provide the fitting solution for your system.

The latest generation of our DC/DC converters for e-mobility – also in fuel cell applications – enables a high power density and current carrying capacity with a very flat design using planar components. All converters and industry-grade power supplies are very robust and perfectly protected against rough environmental influences like vibration, shock, high temperature differences, humidity and aggressive atmosphere.

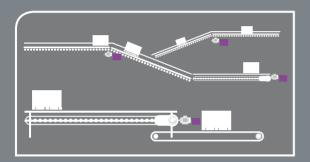
Due to our in-house production, customer-specific changes are possible even for small series.

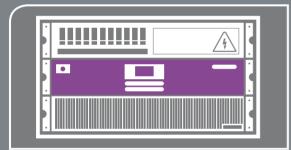
Our controllable power supplies for DIN rail or 19" installation complete our product portfolio.











# Industrial vehicles

For all types of industrial vehicles – including electro vehicles – we provide the fitting DC/DC converter.

#### Intralogistics

Automated intralogistic plants cannot afford off-times. Our robust industry power supplies provide 100 % reliability even under the harshest environmental conditions.

# Switch cabinet and DIN rail

We provide suitable power supplies for rack mounting and DIN rail.

# **DVCx3-Series** DC/DC converter for hybrid and electric vehicles

The latest generation of DC/DC converters for electromobility – also in fuel cell applications – enables a high power density and current carrying capacity with a very flat design using planar components.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVC153-24/36-12	36VDC	12,5VDC	12A	105173/x/yyy*
DVC153-48-12	48VDC	12,5VDC	12A	105174/x/yyy*
DVC153-80-12	80VDC	12,5VDC	12A	105175/x/yyy*
DVC453-24/36-24	24–36VDC	24,3VDC	18,5A	105176/x/yyy*
DVC453-48/80-24	48-80VDC	24,3VDC	18,5A	105177/x/yyy*
DVC953-48/80-13,8-CAN	48-80VDC	2–16VDC	80A	105185/x/yyy*
DVC853-48/80-13,8	48–80VDC	13,8VDC	70A Boost 160A (t<=4s)	105149/x/yyy*
DVC1903-48/80-24	48-80VDC	24,3VDC	70A Boost 160A (t<=4s)	105178/x/yyy*

\* x Accessory variant

y Setting (Standard setting or customized)









- ✓ Power range 150–1900W
- Conduction cooling no extensive cooling concept needed
- Extremely compact design (planar technology), dry design (electrolyte-free)
- Available CAN protocols: Standard-CAN and J1939
- ✓ Protection classes IP54, IP65
- Customized changes possible
- Connecting plugs and cables available as accessories



The latest generation of galvanically not isolated DC/DC converters enables a high power density and current carrying capacity with a very flat design using planar components.

# Technical data

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DR183-24-12	24VDC	12,3VDC	15A	on request
DR503-48-24	33–63VDC	24,3VDC	20A	on request



# Logistics





- Regulated output
- Extremely small and robust
- Typical efficiency of 96 %
- ✓ Switchable output
- Customized changes possible



- ✓ Isolation switch as protection measure
- ✓ Parallel connectable without control line
- ✓ Typical efficiency of 96 %
- Short-circuit / No-load protection, over temperature protection
- Customized changes possible

The encapsulated form of our DVC standard vehicle converters allows the operation in harsh environments such as in logistics, industrial trucks, railway applications or e-mobility.

With the possibility of customer specific adaptations including the inhibit function and various certifications (E1-ECE or similar) the scope of application has a wide range.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVC75-24-5	24VDC	5VDC	8A	105100
DVC75-24-12	24VDC	12,5VDC	4A	105101
DVC75-24-20	24VDC	20VDC	2,5A	105103
DVC75-24-24	24VDC	24,5VDC	2A	105102
DVC75-36-12	36VDC	12,5VDC	5A	105051
DVC75-36-24	36VDC	24,5VDC	2,8A	105053
DVC75-48-12	48VDC	12,5VDC	6A	105083
DVC75-48-15	48VDC	15VDC	5A	105049
DVC75-48-24	48VDC	24,5VDC	3,2A	105092
DVC75-80-12	80VDC	12,5VDC	6A	105085
DVC75-80-24	80VDC	24,5VDC	3,2A	105093
DVC75-80-24/RA	80VDC	24,5VDC	3,2A	105048
DVC75-80-24/RA	80VDC	24,5VDC	3,2A	105048/2
DVC125-24-12	24VDC	12,5VDC	8A	105078
DVC125-24-15	24VDC	15VDC	6,5A	105071
DVC125-24-24	24VDC	24VDC	5A	105079
DVC125-36-24	36VDC	24VDC	5,5A	105107
DVC125-48-12	48VDC	12,5VDC	10A	105086
DVC125-48-20	48VDC	20VDC	5,5A	105104
DVC125-48-24	48VDC	24VDC	5,5A	105080
DVC125-80-12	72/80/96/110VDC	12,5VDC	10A	105087
DVC125-80-24	72/80/96/110VDC	24VDC	5,5A	105082

### Logistics





- DC/DC wide range input
- ✓ Filtered against vehicle on-board disturbances
- ✓ Galvanically isolated
- Regulated output, very high efficiency
- ✓ Short-circuit / No-load protection



- Protection against unfavourable environmental conditions
- Filtered against vehicle on-board disturbances
- Regulated output, very high efficiency
- ✓ Over temperature protection
- ✓ Parallel connectable
- ✓ Galvanically isolated

#### **DVC Standard** Standard converter for vehicles

#### Technical data

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DVC150-48-12	48VDC	12,5VDC	12A	105088
DVC150-48-24	48VDC	24VDC	6,5A	105089
DVC150-80-12	72/80/96/110VDC	12,5VDC	12A	105090
DVC150-80-24	72/80/96/110VDC	24VDC	6,5A	105091
DVC251-12-12	12VDC	12,5VDC	11A	105120
DVC251-12-24	12VDC	24VDC	7A	105121
DVC251-24-12	24VDC	12,5VDC	18A	105122
DVC251-24-24	24VDC	24VDC	9,5A	105123
DVC251-24-27,6	24VDC	27,6VDC	8,2A	105141
DVC251-48-12	48VDC	12,5VDC	20A	105124
DVC251-48-24	48VDC	24VDC	10,5A	105125
DVC251-80-12	72/80/96/110VDC	12,5VDC	20A	105126
DVC251-80-13,8	72/80/96/110VDC	13,8VDC	18A	105130
DVC251-80-24	72/80/96/110VDC	24VDC	10,5A	105127
DVC251-EUT-12-24	12VDC	24VDC	10,5A	105131
DVC251-EUT-24-24	24VDC	24VDC	8A	105133
DVC500-36-24	36VDC	24VDC	21A	105119
DVC500-48-12	48VDC	12,5VDC	40A	105114
DVC500-48-13,8	48VDC	13,8VDC	36A	105112
DVC500-48-13,8/ITO12	48VDC	13,8VDC	36A	105112/1
DVC500-48-24	48VDC	24VDC	21A	105115
DVC500-80-12	72/80/96/110VDC	12,5VDC	40A	105116
DVC500-80-13,8	72/80/96/110VDC	13,8VDC	36A	105109
DVC500-80-24	72/80/96/110VDC	24VDC	21A	105117

### Logistics





- Protection against unfavourable environmental conditions
- ✓ Filtered against vehicle on-board disturbances
- Regulated output, very high efficiency
- ✓ Over temperature protection
- ✓ Parallel connectable



- DC/DC wide range input
- ✓ Filtered against vehicle on-board disturbances
- Galvanic separation 1,5kV (500V at 12/24VDC input voltage)
- Regulated output, very high efficiency
- ✓ Over temperature protection



- DC/DC wide range input
- ✓ Short-circuit / No-load protection
- Regulated output, very high efficiency
- ✓ Over Temperature protection
- Parallel connectable (Option: Smart output characteristic)

### **DR Standard** Standard converter for vehicles – galvanically not isolated

#### Technical data

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DR25N-12	24–96VDC	12VDC	2A	106062
DR25N-12/FE	24–96VDC	12VDC	2A	106073
DR100N-12	24–48VDC	12VDC	8A	106065
DR100N-12/FE	24–48VDC	12VDC	8A	106071
DR100N-13,8	24–48VDC	13,8VDC	7A	on request
DR100N-13,8/FE	24–48VDC	13,8VDC	7A	on request
DR125N-12	48–80VDC	12VDC	5A	106059
DR125N-24	48–80VDC	24VDC	5A	106060
DR150N-24	48–80VDC	24VDC	6,5A	106063
DR160-24-12	80VDC	12 / 24VDC	3A / 5,2A	104970
DR350-12	24–48VDC	12VDC	25A	106066
DR350-24/48-13,5	24–48VDC	13,5VDC	23A	106070
DR350-24	48–80VDC	24VDC	15A	106067



### Logistics



#### DR25N/100N/125N/150N



- ✓ DC/DC wide range input
- Input filtered against interference from thyristor vehicle drives
- Solid construction
- Parallel connectable without control lead
- ✓ Efficiency up to 95 %



- Solid construction
- ✓ Over temperature protection
- Regulated output
- LED Display
- DC/DC wide range input



- Regulated output
- Input filter versus disturbances of thyristors drives
- Parallel connectable without control lead
- ✓ DC/DC wide range input
- ✓ Efficiency up to 96 %

# **DP500IP-Series** – Our decentralized power supply Benchmark in robustness, reliability and cost savings

The power supplies of the DP500IP series meet the increased requirements in industry and logistics and are designed for use in harsh environments.

#### **Technical data**

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
DP500IP-12	100–240VAC	12VDC	40A	109518
DP500IP-13,8	100–240VAC	13,8VDC	35A	109517
DP500IP-24	100–240VAC	24VDC	20A	109515
DP500IP/3-24	3AC 380–500VAC	24VDC	20A	109514









- Vibration-proof design, especially for rough environments
- Potted, compact design
- No inrush current
- ✓ Very low stand-by-power
- Extensive protection for power output: Short circuit, no-load, overvoltage, overtemperature, energetic recovery



### **D-IPS-Series** Controllable power supplies

The D-IPS power supplies are primary switched, controllable built-in power supplies for the use in control cabinets.

#### Technical data

Туре	Input voltage	Output voltage	Max. output current	ArtNo.
D-IPS250C-24	100–240VAC	0–30VDC	0–10A	101130
D-IPS250C-60	100–240VAC	0–65VDC	0–5A	101133
D-IPS500C-24	100–240VAC	0–30VDC	0–20A	101140
D-IPS1000C-24	100–240VAC	0–30VDC	0–40A	101150
D-IPS1000/3-C-24	3AC 380–500VAC	0–30VDC	0–40A	101180







### D-IPS250C/D-IPS500C



- Very low energy consumption in standby mode, high efficiency (constant over whole input range)
- ✓ No inrush current
- Condition monitoring via relay contacts
- Current data can be monitored directly on the display or via interface.





Logistics

**Deutronic Test & Automation** Customized test and inspection systems according to your specifications

#### Test us!

Deutronic test systems combine individual, modular component assembly with the flexibility of our software solution DTS which can be used for all purposes. The result of this symbiosis are application-specifically designed test systems.

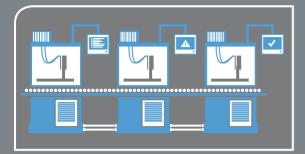
Part of the basic frame for the overall concept are determined by the type of the product to be tested as well as the degree of automation. This process ensures the electrical and physical safety and function of the products according to norms and requirements.

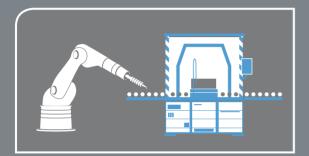
Deutronic test systems can be designed for any possible purpose thanks to their individual, modular setup.

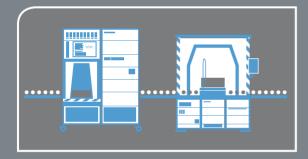
Test systems for testing electric motors, transformers, power supplies, batteries, fuses, switches, plugs, sensors, lights and lamps, lines and cables, white goods, entertainment electronics, train couplings, mechanical relays, semi-conductor relays, magnetic valves, medical devices, etc.

### **Test & Automation**









# Test and measurement systems for the automotive industry

e.g. for electro motors, stators and rotors, batteries

# Test and measurement systems for the industry sector

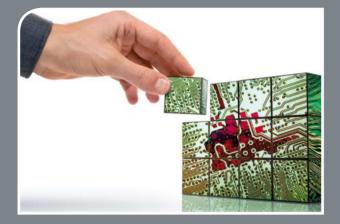
e.g. for fuses, switches, connectors, sensors, lights, cables and wires, home electronics, entertainment electronics, medical devices, transformers, power supplies

# Test and measurement systems for railway applications

e.g. for rail couplings, mechanical relays, semiconductor relays, magnetic valves

### General information / Test software DTS

#### **General information**



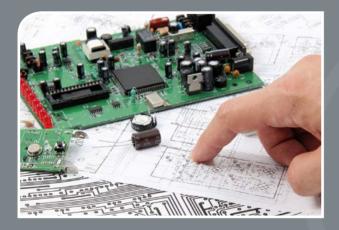
Individual configuration with test equipment from leading suppliers. Retrofits and modernization are possible.

- 🖌 Maximum flexibility
- Reliable components
- 🖌 Tested quality
- Highest reliability and accuracy



Highly flexible and easy to use Deutronic DTS test software

- Can be used without programming skills
- High system stability
- ✓ Windows<sup>©</sup> interface
- Freely programmable
- Extensive test spectrum



Customized test and measurement systems

- Especially for the use in R&D area
- 🗸 Semi-automated
- 🖌 Automated
- Maximum flexibility and variability
- 🖌 Fully network-capable
- 🖌 Safe, fast and reliable
- Optimized test times for maximum efficiency
- Cost-efficient retrofitting possible

### **Test & Automation**





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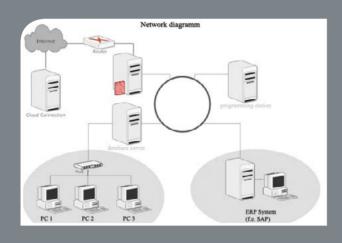


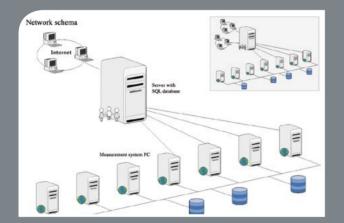
The Deutronic DTS test software is designed for a maximum range of applications and works as Windows<sup>®</sup> desktop application. It can be easily connected to an existing data transfer network.

The documentation and archiving of relevant measurement data is realized in a modern SQL database.

- Can be used without programming skills
- The test system SQL database can be integrated in the company network, data transfer via SPS or directly to a control system via industry-approved bus systems (e.g. Profinet)
- Connection to ERP systems possible
- Flexible test program creation
- Remote diagnostics and maintenance
- Presentation and management of images, graphics, instructions and other technical documents
- Complex calculations possible via MATLAB<sup>®</sup>

#### **Networking software DTS**





- The test system database can be integrated into the company-internal network
- If several test systems are networked, the computer of one test system can manage and provide test programmes as well as technical documentation centrally as server
- Further PCs can be integrated as programming stations
- Connection to several control systems possible
- Data transmission via PLC or directly to control system via industrial bus systems (e.g. Profinet)

### **Test & Automation**



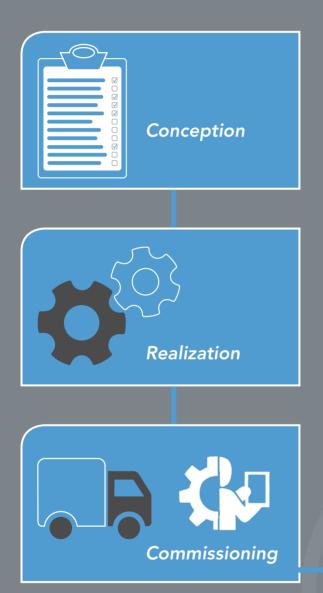
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The Deutronic DTS-Tablo statistics software enables a survey of the manufacturing quality and uncovers improvement potentials. It is designed for statistical test and measurement analysis and evaluation.

- Analysis using statistical methods in real time or in retrospect
- Determination of the current process capability index as well as the process potential during ongoing tests
- Allows immediate reaction to process changes
- Extensive selection possibilities such as time frames, order and article numbers, up to three filter levels
- Graphical and logged measured data analysis (e.g. PASS/FAIL)
- Integrated Cpk-Analysis
- Flexible detail filters via SQL wizard

### **Lifecycle Service**

With respect to service, Deutronic test systems also convince with an outstanding value proposition. Deutronic offers their customer comprehensive and competent service for all steps, starting from the first conceptual design to the test system modernisation.



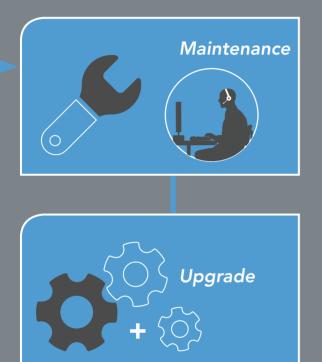
As a solution provider, our experts develop a concept based on the technical specifications of the test object and the overall requirements.

Within the scope of the project management (compliant to the guidelines for machinebuilding), especially lies the on-schedule realization, an accurate risk evaluation and MCA (machine capability analysis). In this step the modular design and the test software are subsequently combined to a custom-made test and measurement system.

To meet highest quality demands, user training as well as excellent support are provided in addition to several acceptances.

### **Test & Automation**

#### Lifecycle Service



Within the scope of a maintenance agreement, Deutronic assures the entire test system maintenance. Calibration can also be performed upon request.

A new product generation often also includes changing test sequence requirements. Together with the flexible test software, the modular design allows a cost-efficient test system adjustment to changed requirements.

### **Customer-specific examples**

#### Test system for electric motors

Modern test concepts for various electro mobility components do not only require a deep understanding of the drive technology but also a high degree of automation to optimize the cycle time in a series production. Because of the high specimen performance, the mechanical setup requires a suitable construction. The focus of this EOL test station is on the fully automated test sequence which also includes the mechanical and electrical contacting. Flexible production uses are possible because of the fast and uncomplicated change of the contacting unit.

The test sequence is defined and loaded by the recorded barcode on the work piece carrier. The collection and permanent storage of test data ensures the unrestricted reproducibility of measured values, even across systems.



- Resistance measurement of winding resistances, temperature sensors, isolation resistance of winding, contact resistance of the shield connections
- 🖌 HV test
- Determination of the Resolver-Offset Angle
- Residual magnetism at the shaft end of the rotor

- Idling values of motor
- Determination of the non-linearity of the resolver
- Electro-magnetic force (EMF)
- Total Harmonic Distortion (THD)
- Speed ripple of the motor rotation speed
- Measurement of the structure-borne sound
- ✓ Determination of the friction loss
- 🖌 Etc.

### **Test & Automation**



#### Test system for rotors

An example of a fully automated test and measurement system for rotors as part of a production line for electro motors. The flexible specimen mounting, that enables the contacting of all required specimens without changing the test station, is integrated in the system.

Patented, fully automated contacting. High-precision partial discharge test in an appropriate frequency band. Surge test. Connectivity to the customer system.



- Winding inductance and resistance with spread width
- Capacity and loss factor with spread width
- Dielectric strengh/impulse voltage with comparison
- Impulse-partial discharge
- Weighing (before and after impregnation)

### **Customer-specific examples**

#### Laboratory testing station for stators

The flexible test system allows a quick and simple funcional test of hairpin or wounded stators for electro machines in the prototype manufactoring, production and repair.

Manual operation for the laboratory. Flexible and dynamic test runs. Customizable measurement equipment.



- Winding resistance with temperature compensation
- ✓ Winding resistance with spread width
- Capacity and loss factor

- Test of the dielectric strength
- Impulse voltages in comparison
- Partial discharge
- 🗸 Weight

#### Drum motor test system

Drum motors must withstand highest electrical and physical loads. This requires thorough quality control at end of production.

The shown test system was designed as standing workstation with handling system based on a linear transfer system. A touch panel installed on the side is used for operation. A ball table integrated into the test system enables loading of test objects of different weight and size. For this requirement, the product-specific work piece carriers were divided into two pieces to omit test object transfer.

The actual test chamber is shielded with a light curtain of safety category 4. The mechanical handling systems realised using compressed air is inside the chamber.



- Resistance test of motor windings
- Determination of current / voltage / power
- Resolver curve calculations

- Structure-borne noise test
- Function test of motor, brake, non-return device, rotary encoder

Flexible development and production capacities due to the business group of the *EDWANZ group*.

1

### EDWANZ group Added value of our company group

As an EDWANZ group company, we offer all the advantages of our company group.

- ✓ Wide service portfolio
  - Flexible capacities for development and production
  - Worldwide service

#### Specialized in intelligent power electronic systems

Battery charging systems | DC/DC converter | Power supplies Test and measurement systems | Motor controller

Specialized in electromechanical systems

Vending machines & terminals | Metal housings & assemblies Components for medical engineering & telecommunication Inductive components

# Specialized in development and integration of electronic systems

ECU software | Development tools for the automotive industry Measurement technologies for ADAS | Mobile automation Embedded systems



- 59 -





EDWANZ group

**b-plus** GmbH



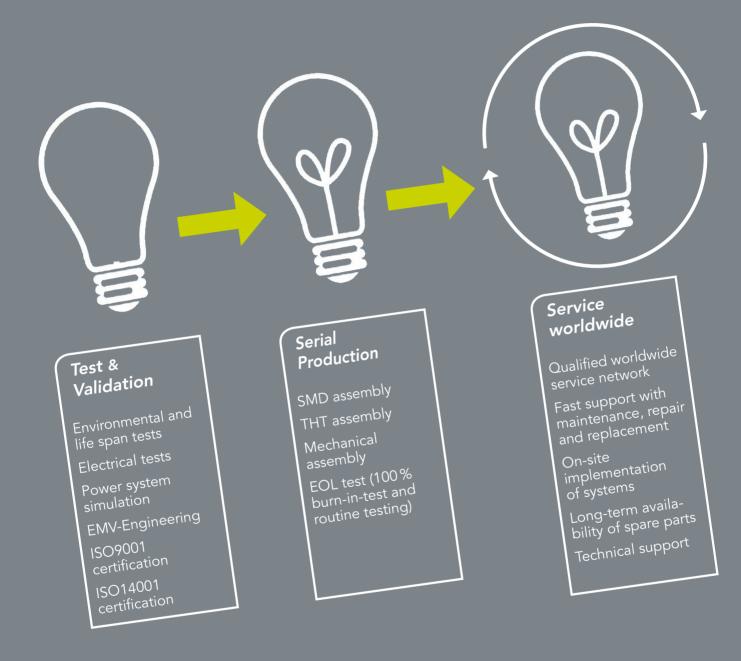
#### Prototype Construction Research & Development Circuit board mill Conception SMD assembly Research center for energy storage CNC mill review Technological development Production-related Project planning prototype manufactoring Pre-development Hardware Design thinking development Software development Construction

**Everything from a single Source.** In-house production to series. Added value for the customer.

**J**RE

### Everything from a single source





# MORE

**Individual product solutions** – Everything is possible

### Individual product solutions (examples)





The Motor controllers are state-of-the-art sinusoidal commuted speed controllers. The engine current is regulated to a sine wave to guarantee an optimal and highly efficient activation of the engine with this commutation principle.



In the field of building automation Deutronic offers compact and high-performance power supplies with extremely low standby current consumption and innovative solutions for energy storage technology.

#### По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231 Архангельск (8182)63-90-72 Астрахань (8512)99-46-04 Барнаул (3852)73-04-60 Белгород (4722)40-23-64 Брянск (4832)59-03-52 Владивосток (423)249-28-31 Волгоград (844)278-03-48 Волоград (8172)26-41-59 Воронеж (473)204-51-73 Екатеринбург (343)384-55-89 Иваново (4932)77-34-06 Ижевск (3412)26-03-58 Иркутск (395)279-98-46

Россия (495)268-04-70

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Казахстан (7172)727-132

Смоленск (4812)29-41-54

Ставрополь (8652)20-65-13

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