POWER AND MORE®

Power under control

DEUTRONIC® elektronik

Power Supplies Electronics · Test and Measurement Systems · EMC Lab

Product Spectrum and Performance Overview

- Power Supplies
- Power Electronics
- Battery Charging Systems
- Test Automation
- Embedded Systems
- Functional Automation
- Electromechanics

DEUTRONIC®
elektronik gmbh
Power-Supplies-Electronics ▪ Test- and Measurement Systems ▪ EMC-Lab
Advanced Technologies
EDWANZ group

www.deutronic.com
2010/2011 V.1

Deutronic Elektronik GmbH

Deutronic Elektronik GmbH is an innovative and reliable partner for the realisation of customised projects. For more than a quarter of a century high-tech power supplies, power supply systems, as well as test and inspection systems have been manufactured in Lower Bavaria, time and again setting new standards of excellence.

Production began in 1983 in a small, rented workshop in Adlkofen. But by 1986 the employees moved to the ca. 30 000 m² company site with its new company buildings including a 1800m² production facility. In 1991 the building was again increased by 4600m² and in the meantime an additional 4000m² extension is planned.

Initially the main market focus was on the telecommunications sector. But in the meantime the customer base has increased to include many industrial branches. Due to continuous development of the products close to the markt, Deutronic Elektronik GmbH has secured the market leadership for automobile charging technology in manufacturing facillities worldwide. Nearly all well-known automobile manufacturers use chargers respectively complete production line power supplies from Deutronic Elektronik GbmH. For more than 2 years high-performance equipment for lithium-ion batteries for E vehicles and their applications have been produced, (6kW cascadable up to 30kW).

Likewise Deutronic Elektronik GmbH has become a market leader with its measurement and test department using test automats for serial production e.g. for servo-motors, transformers, stators, power supply testing, etc. The easy to use software offers the required solution for every test assignment. Management and QS data can be remotely accessed as well as the remote programming of the test data.

Apart from a large portfolio of standard products Deutronic Elektronik GmbH as an OEM manufacturer also develops and manufactures specific solutions for customers worldwide. Use of its professional develoment teams and individual customer support result in a multitude of decerning high-tech customised solutions - „Made by Deutronic“!

Contents

- Controllable Modular Power Supply
D-IPS® C 4
DXC 11

- Modular Power Supply for TS 35 DIN Rail
D-IPS® 5
D-TOP 12
E-TOP 13

- Uninterruptable Power Supply
Battery management system D-IPS®-BM 6
Battery management system with power supply connection D-IPS®-IBM 7

- D-IPS® ACS Procedure 8

- Accessories for the D-IPS® Series 10

- Battery Charging Computers 14

- Accessories for Battery Charging Computers 17

- Building Automation 18

- DC/DC Converter
For TS35 DIN rail 19
For circuit boards and DIN rial mounting 20
For vehicles 21

- Equipment Power Supplies
Encapsulted power supply modules 23
High voltage modules 23
Wall mount plug in adapter 24
Desktop power supplies 25
Open Frame 26
19“ power supplies 26
E-Line 27

- Customer Specific Solutions 28

- System Technology 30

- EMC Engineering 31

- Test and Measurement Systems 32

- Corporate Group EDWANZ AG 38

- Distributors 41

- Charging Distributors / Worldwide Service 43

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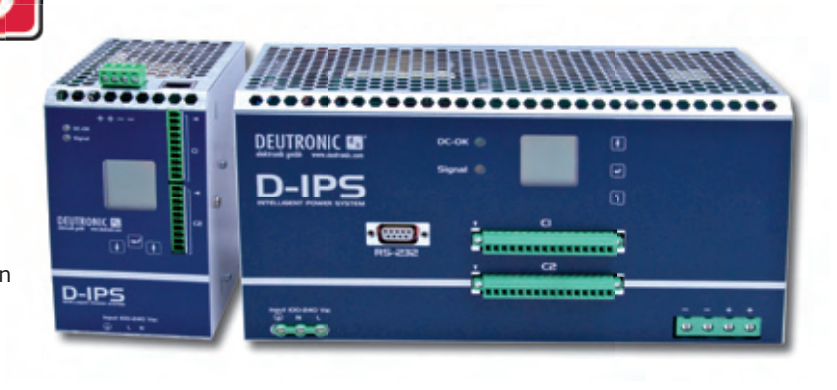
Controllable D-IPS® Modular Power Supply 150-1000 Watt

CE

CSA certification pending



- **Power supply+functionality of a small PLC**
- **No power-on current surge**
- **Option: Customer specific programmability**
- **Coated modules**
- **Low Standby**
- **Potential-free sensor connections**

Profi - System

Special versions for pulsed loads and other output voltages on request!

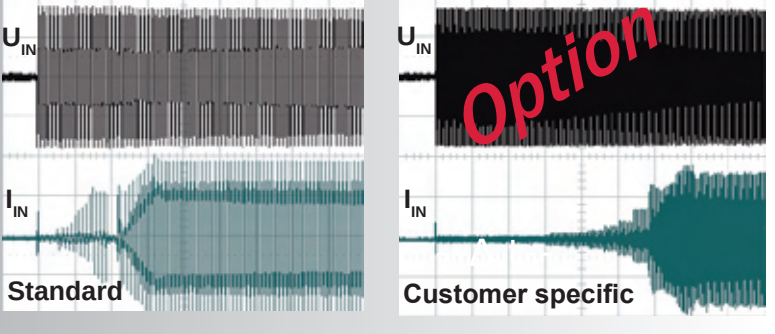
Type	Input VAC (VDC*1))	Output VDC controllable	U_{AUX}	Power	Dimensions	Item No.
					WxDxH	
1-Phase units						
D-IPS®250C	100-240	0 - 30*	5V/0,1A	250W	80x130x139mm	101130
D-IPS®500C	100-240	0 - 30*	5V/0,1A	500W	80x130x139mm	101140
D-IPS®1000C	100-240	0 - 30*	24V/0,1A	1000W	260x130x139mm	101150
3-Phase units						
D-IPS®350/3-C	3AC 380-500V	0 - 30*	5V/0,1A	350W	80x130x139mm	101160
D-IPS®500/3-C	3AC 380-500V	0 - 30*	5V/0,1A	500W	80x130x139mm	101170
D-IPS®1000/3-C	3AC 380-500V	0 - 30*	24V/0,1A	1000W	260x130x139mm	101180

* further possible versions: 12/15/36/54/69/110 VDC
*1) input 130-350VDC respectively 400-780VDC

Further characteristics

- Enviromentally protected against moisture, dust and corrosive atmospheres through coated modules
- Input 1AC / 3AC
- Low standby power (<1,5W)
- Very high efficiency factor up to 94%
- High energy efficiency
- High transient strength
- Compact design
- Digital control of the primary side (no power-on current surge)
- Digital control of the secondary side
- Controllable output values (U/I/P)
- Analogue and digital interfaces
- Adjustable load parameter characteristic
- Programmable customer specific sequence (e.g. sequential controller)
- Potential-free auxilliary output for sensors
- Auxilliary voltage potential-free (5V/24V)

Behaviour of the inrush current



Examples of possible applications

- Supply of LED clusters (brightness control and current control due to warming of the LEDs)
- Plasma coating
- Control of textile machines
- Elektrolysis equipment (e.g. for disinfection)
- Evapouration plants for chemical facillities
- Cement respectively concrete production (e.g. control of the mixing ratio of water to other components)
- Worldwide operation in automation technology

Available standard interfaces

- Analogue (0-10V device dependent 4-20mA)
- RS232 (potential free)

Versions

- Ethernet
- Further on request e.g. USB, CANopen etc.

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Your special unit in stock! High cloning protection for your special application

D-IPS® Modular Power Supply for TS 35 DIN Rail 150-1000 Watt

- **Digitally controlled supply input circuit (DSP)**
- **500 Watt: 60 mm wide**
- **Low Standby**
- **No power-on current surge**
- **Coated modules**
- **Programmable (factory setting) output characteristic**
- **Especially high transient strength**

CSA certification pending

Basic - Intelligent - System

Type	Input VAC (VDC*1))	Output VDC	Power	Dimensions	Item No.
				WxDxH	
1-Phase units					
D-IPS®150	100-240	24*	150W	39x130x139mm	101020
D-IPS®250	100-240	24*	250W	60x130x139mm	101030
D-IPS®500	100-240	24*	500W	60x130x139mm	101040
D-IPS®1000	100-240	24*	1000W	260x130x139mm	101050
3-Phase units					
D-IPS®350/3	3AC 380-500V	24*	350W	60x130x139mm	101060
D-IPS®500/3	3AC 380-500V	24*	500W	60x130x139mm	101070
D-IPS®1000/3	3AC 380-500V	24*	1000W	260x130x139mm	101080

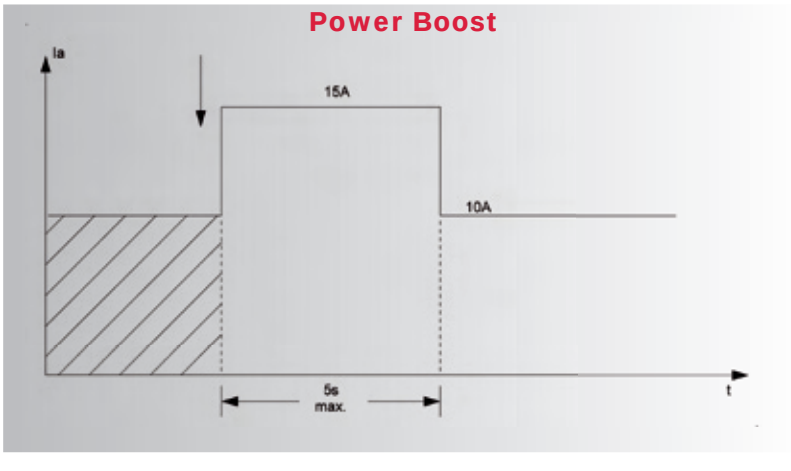
* further possible versions: 12/15/36/54/69/110 VDC
*1) input 130-350VDC respectively 400-780VDC

Further characteristics

- No power-on current surge
- Especially high transient strength, very high overload reserves
- Back-up fuse for equipment protection
- Ultra low standby-power (<1Watt)
- Environmentally protected against moisture, dust and corrosive atmospheres through coated modules
- Very high efficieny factor up to 94%
- Factory set adjustable load parameter characteristic
- Use in DC networks

Versions

A) Basic unit: Digitally regulated primary side
B) C-Serie: Digital primary and secondary side regulation with display
C) Special module: IP62, 19-inch, MED etc.



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Application and project consulting from our development department.

D-IPS®-BM Uninterruptable Power Supplies for TS 35 DIN Rail 150-1000 Watt

CE

CSA
certification
pending

- **Intelligent self-adapting battery management system (Adaptive Current Step=ACS Procedure)**
- **Temperature compensated diagnostic procedures**
- **Charging factor up to 1,02**
- **Charging efficiency up to 98%**
- **Interface: RS-232 Optional: Ethernet or USB**

Intelligent - System

Type	Input VDC	Output VDC	Power	Dimensions	Item No.
	System voltage				
				WxDxH	
With D-IPS® ACS procedure					
D-IPS®-BM24-6	24	22 - 30*	150W	60x130x139mm	101221
D-IPS®-BM24-10	24	22 - 30*	250W	60x130x139mm	101222
D-IPS®-BM24-20	24	22 - 30*	500W	60x130x139mm	101223
D-IPS®-BM24-40	24	22 - 30*	1000W	60x130x139mm	o.r.
Standard procedure (Temperature compensated IU_0U procedure)					
D-IPS®-BM-EC24-6	24	22 - 30*	150W	39x130x139mm	101251
D-IPS®-BM-EC24-10	24	22 - 30*	250W	39x130x139mm	101252
D-IPS®-BM-EC24-20	24	22 - 30*	500W	39x130x139mm	101253
D-IPS®-BM-EC24-40	24	22 - 30*	1000W	39x130x139mm	101255

* further possible versions: 12/48 VDC

Further characteristics D-IPS®-BM

- High-tech battery charging and maintenance system for indoor and outdoor applications
- Almost 100% full charging
- Simple switching functions with overcurrent and deep discharge protection
- Intelligent, self-adapting charging procedure
- Exact charging balancing, progressive long-term care, charging efficiency up to 98%
- Exact temperature compensated battery diagnostic procedure
- No „thermal runaway“ through integrated thermal management
- Suitable for VdS applications
- Suitable for lead-acid batteries (standard, AGM, gel, ...)
- Freely configurable via RS232, option: Ethernet or USB
- Enviromentally protected against moisture, dust and corrosive atmospheres through coated modules

Further characteristics D-IPS®-BM-EC

- An especially cost effective UPS system
- Microprozessor control, adjustable parameters
- Simple switching functions with overcurrent and deep discharge protection
- Battery charging directly from the connected power supply (D-IPS® or similar)

Note
A temperature sensor is not included in the standard delivery of the battery management system, but rather directly built-in to the exernal Deutronic battery modules of the D-IPS®-BM-BAT series.
If the customer application includes an individual customer battery (i.e. not delivered by Deutronic), an external, active temperature sensor is optionally available from Deutronic.

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D-IPS®-IBM Uninterruptable Power Supplies for TS 35 DIN Rail 150-1000 Watt

- **UPS battery management system (Adaptive Current Step=ACS Procedure) with integrated D-IPS® power supply**
- **Regeneration of aged (sulfated) cells**
- **Charging factor up to 1,02**
- **Charging efficiency up to 98%**
- **Interface: RS-232**
  Optional: Ethernet or USB

CE

CSA
certification pending

Intelligent - Combi - System

Type	Input VAC (VDC*[1])	Output VDC	Power	Dimensions	Item No.
				WxDxH	
D-IPS®-IBM150-24	100-240	20 - 30*	150W	98x130x139	101262
D-IPS®-IBM250-24	100-240	20 - 30*	250W	119x130x139mm	101267
D-IPS®-IBM500-24	100-240	20 - 30*	500W	119x130x139mm	101272
D-IPS®-IBM1000-24	100-240	20 - 30*	1000W	o.r.	o.r.

* further possible versions: 12/48/54 VDC
*[1] input 130-350VDC respectively 380-500, 400-780 VDC

Further characteristics

- High-tech battery charging and maintenance system for indoor and outdoor applications
- Almost 100% full charging
- High charging performance with empty batteries
- Intelligent, self-adapting charging procedure
- Exact charging balancing, progressive long-term care, charging efficiency up to 98%
- Exact temperature compensated battery diagnostic procedure
- No „thermal runaway“ through integrated thermal management
- Suitable for VdS applications
- Suitable for lead-acid batteries (standard, AGM, gel, ...)
- Freely configurable via RS232, option: Ethernet or USB
- Enviromentally protected against moisture, dust and corrosive atmospheres through coated modules

Presented with the E.ON 2009 environmental prize the Deutronic D-IPS® ACS battery charging and diagnostic procedure (ACS = Adaptive Current Step) is an innovative and extremely efficient procedure for UPS systems with lead-based batteries (e.g. standard, AGM, gel, pure lead).

The D-IPS®-BM (UPS battery management system for TS35 DIN rail) integrated temperature compensated ACS procedure enables a charging factor1) of up to 1,02, i.e. a charging efficiency up to 98% (currently charging factor values about 1,10-1,20 are common). It protects against the so-called thermal “run away” of the battery and offers a very careful battery charging. Furthermore, the D-IPS® ACS procedure extends the life-cycle of the utilized battery and considerably reduces the amount of energy for trickle charging - as opposed to common procedures available. Additional features include the configuration possibility using PC-Tool with state-of-charge and state-of-health report for the battery.

The battery management system offers versions for 12V, 24V and 48V lead-acid batteries as-well-as equipment with integrated AC power supplies (D-IPS®-IBM), which are carried out in established D-IPS® technology power supplies with a digitally controlled input circuitry.

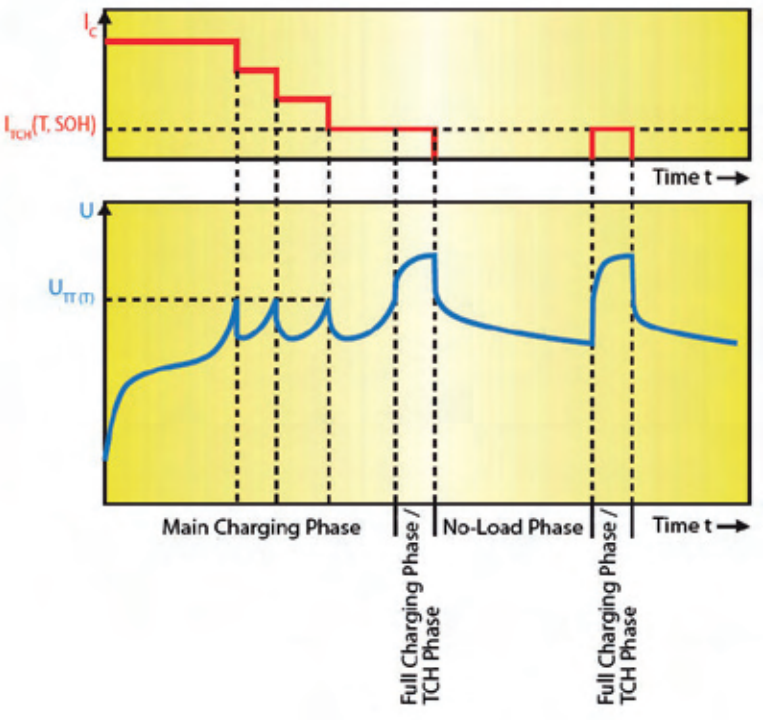
The D-IPS® ACS Procedure for D-IPS®-BM and D-IPS®-IBM

Main Charging Phase:

- CONSTANT CURRENT CHARGING: enables an ideal quick charging of the battery with high charging current and relatively low temperature compensated charging voltage (far below the gassing voltage).

- ADAPTIVE CURRENT STEP CHARGING PROCEDURE: Immediately the algorithm detects the onset of secondary reactions in a relevant magnitude, the next constant current charging step is activated.

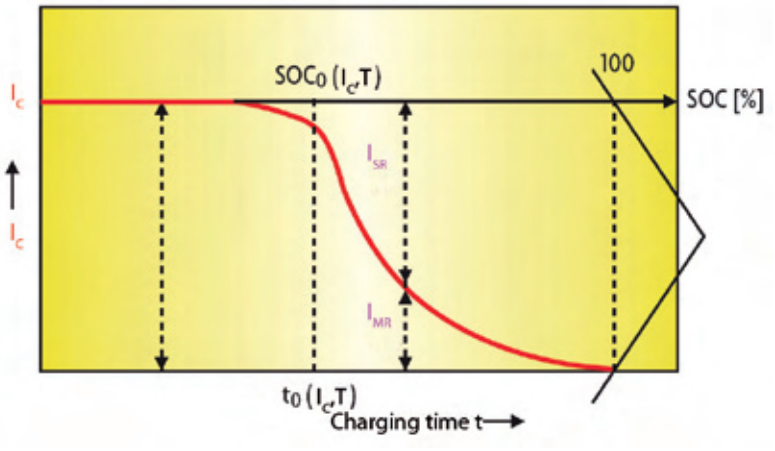
- According to the ascertained battery parameters the procedure is repeated until the lead-acid battery is nearly charged.



Full Charging Phase / No-Load Phase:

- At the end of the charging process there follows a short FULL CHARGE / TRICKLE CHAR GE PHASE (TCH), after this is a change to the NO-LOAD PHASE (OCV = OPEN CIRCUIT VOLTAGE).

- During the no-load phase the lead-acid battery is CONTINUALLY MONITORED. Until recharging occurs, the charge status drops during the no-load phase by a max. 3-5% (charging takes place at the latest after 23 days). The duty factor of the recharging phases is below 1 ‰ , which enables high ENERGY SAVINGS and at the same time REDUCED AGEING.



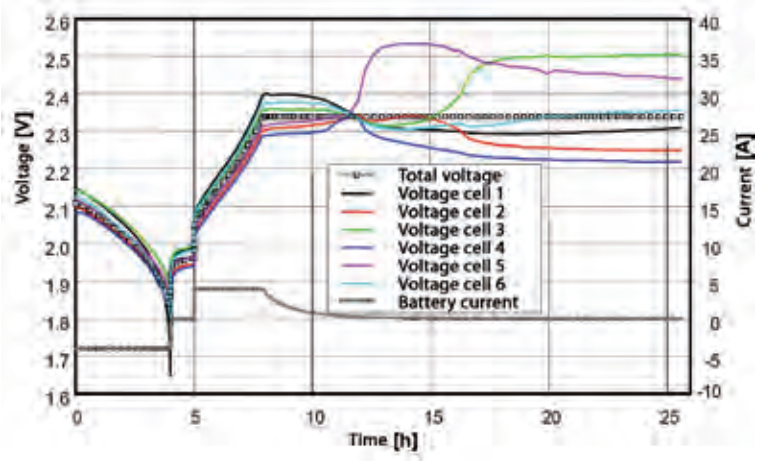
TECHNICAL NOTE:
With traditional, standard IU procedures nearly all the energy fed into the battery during the trickle charge phase is expended in side reactions (SR) and hence in the ageing of the battery - with simultaneous deficient charging of the battery (explanation - cf. the following description “serial effect”).

The D-IPS® ACS Procedure for D-IPS®-BM and D-IPS®-IBM

Serial effect:

- The adjacent diagram shows the trend of the individual cell voltages in a 12V AGM UPS battery. To provide reproducibl conditions for the subsequent charging procedure at the beginning of the recording the battery is DISCHARGED.

- After a short pause, charging is commenced with a CONSTANT CURRENT PHASE and then subsequently transferring into a CONSTANT VOLTAGE PHASE. The charging current is portrayed by the curve in the lower part of the diagram.



TECHNICAL NOTE:
During the CONSTANT CURRENT PHASE (cf. ACS procedure) the cells behave homogeneously. Internal parameter changes have no effect on the terminal voltage of the other individual cells, because the same current is continually flowing through all cells.

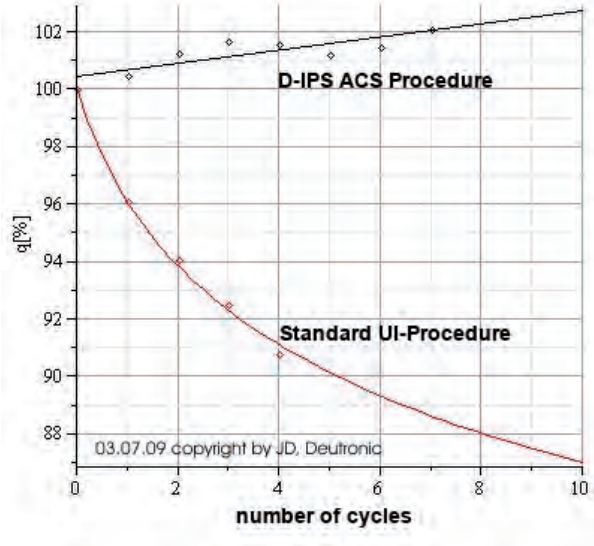
- SERIAL EFFECT - the NEGATIVE RESULTS OF CONSTANT VOLTAGE CHARGING become apparent through a considerable divergence of the individual cell voltages as the resulting cell-voltage behaviour shown in the diagram above. During a charging procedure to fully charge a lead-acid battery, the change of any single cell effects all other serially connected cells. During the course of the charging procedure with constant voltage charging, some individual cells develop higher contact voltages, whereas other cells are increasingly less charged and even give-up their charge, so that the contact voltage decreases. The reason for this are inhomogeneities of the cell parameters within the battery (as for example differing internal resistances or SOC= STATE-OF-CHARGE).

TECHNICAL NOTE:
Consequence of CONSTANT VOLTAGE CHARGING is an excessive ageing of the battery because single cells are being overloaded during charging procedure while other cells in the battery receive insufficient charge!

Charging Cycles / Capacity Behaviour:

- The adjacent diagram shows the capacity behaviour of a UPS battery (type: gel, 12V/60Ah) over multiple charging and discharging cycles.

- The D-IPS ACS PROCEDURE HOLDS THE BATTERY CAPACITY STABLE, whereas after only a few charging/discharging cycles the capacity of UPS battery charged with the conventional IU charging procedure will be noticeably reduced due to deficient charging.



Accessories for the D-IPS® Series

Battery module with integrated, active temperature sensor

Type	Description	Dimensions*	Item No.
		WxDxH	
Closed housing with integrated, aktive temperature sensor			
D-IPS-BM-BAT-12-14Ah	includes two 12V/7Ah lead-acid batteries; fusing: 30A	175,4x124,5x170	101823
D-IPS-BM-BAT-24-7Ah	includes two 12V/7Ah lead-acid batteries; fusing: 25A	175,4x124,5x170	101824
D-IPS-BM-BAT-24-14Ah	includes four 12V/7Ah lead-acid batteries; fusing: 2x 25A	305,4x124,5x185	101825
Open housing with integrated, aktive temperature sensor			
D-IPS-BM-BAT-OC-12-7Ah	includes one 12V/7Ah lead-acid batteries; fusing: 25A	112x105x156	101820
D-IPS-BM-BAT-12-14Ah	includes two 12V/7Ah lead-acid batteries; fusing: 25A	177x105x156	101821
D-IPS-BM-BAT-24-7Ah	includes two 12V/7Ah lead-acid batteries; fusing: 25A	177x105x156	101822

* for additional dimensions see the technical data sheet

Note
All battery modules are also available, on request, WITHOUT a temperature sensor!

External battery module
All standard lead-acid batteries are permissible (e.g. standard, AGM, gel, pure lead).
The external temperature sensor is directly built in to the respective Deutronic battery module.

External, active temperature sensor for an individual customer battery

Item.-No. 140196

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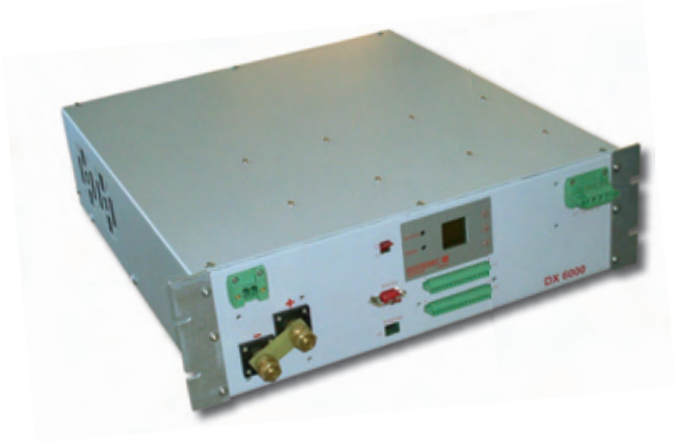
Application and project consulting from our development department.

Controllable Modular Power Supply



For process technolgy plant
- **Option: Bus controllable**
- **Option: Pulser**
- **Option: Lithium charger**

High Voltage - System

Special versions for pulsed loads and other output voltages on request!

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
3-Phase units					
DXC2000/3	3AC 400-500V	0 - 60*	2000W	443x495x131mm	o.r.
DXC3000/3	3AC 400-500V	0 - 60*	3000W	320x370x135mm	101916
DXC6000/3	3AC 400-500V	0 - 120*[1)]	6000W	443x495x131mm	101924

* further possible versions: 120 VDC
*[1)] further possible versions: 500 VDC

Further characteristics

- Protected against environmental influences (moisture, dust and corrosive atmospheres) through
  - Sealed housing
  - Coated modules
- Analogue and digitally controlled output values
- Extensive protection and self-protection functions (e.g. overvoltage protected, overtemperature protected)
- Efficieny factor up to 94% (type dependent)

With the DXC series Deutronic presents a high-tech and innovative high power power supply generation, which open new possibilities for industrial processes.

Due to the modular system technology the individual modules can be switched together to realise a **user specific** plant concept.
The new and **cost efficient** technology enables the DXC variant the control of output current and voltage (from 0 to nominal value) via separate control signals (0-10VDC, 4-20mA).

The DXC product range is also available as a BUS controlled version. All BUS controlled versions have isolated interfaces via fast opto-couplers with at least 1500V insulation resistance (output - housing).

Example of digital version is e.g. the DX3000/3-CAN-xx.
The control of this version is carried out by an integrated processor board, which apart from its higher performance ability also offers enough memory area for substantial process programs to achive complex workpiece manipulations.

Modular Power Supply for TS 35 DIN Rail 20-1000 Watt

- Coated modules
- High noise immunity

- Min. installations depth
- Low Profile = 76mm deep

u.a.

Professional - System

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
Small width (Low Profile)					
D-TOP20LP-24	100-240	24*	20W	35x76x94mm	101850
D-TOP60LP-24	100-240	24*	60W	125x76x94mm	101691
D-TOP120LP-24	100-240	24*	120W	200x76x94mm	101860
1-Phase units					
D-TOP60-24	100-240	24*	60W	52x125x125mm	101703
D-TOP60W-24	115-230	24*	60W	52x125x125mm	101697
D-TOP75-24	100-240	24*	75W	62x142x115mm	101910
D-TOP120-24	230	24*	120W	80x125x125mm	101722
D-TOP140/1-24	115/230 autorange	24*	140W	65x137x115,7mm	101681
D-TOP150-24	100-240	24*	150W	115x142x115mm	101911
D-TOP250-24	230	24*	250W	200x125x125mm	101733
D-TOP500/1-24	115/230 autorange	24*	500W	229x129x87,3mm	101853
D-TOP500/2-24	100-240	24*	500W	240x140x96,5mm	101752
3-Phase units					
D-TOP250/3-24	3AC 400	24*	250W	200x125x125mm	101743
D-TOP250/3W-24	3AC 400-500V	24*	250W	200x125x125mm	o.r.
D-TOP500/3W-24	3AC 400-500V	24*	500W	234x130x88mm	101754
D-TOP1000/3W-24	3AC 400-500V	24*	1000W	240x140x132mm	101764

* further posible versions: 5/12/15/28/40/48/54/60/69 VDC

Further characteristics

- High reliability
- Metal housing
- High noise immunity
- Protection against electric shock
- Protection against moisture, dust and corrosive atmospheres
- Option: International certifications

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Application and project consulting from our development department.

Modular Power Supply
for TS 35 DIN Rail
5-960 Watt

u.a.

- **Cost effective standard power supply**
- **Short circuit protected**
- **Overload protected**
- **No-load protected**

Basic - System

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
1-Phase units					
E-TOP5-24	100-240	24*	5W	90x22,5x115mm	120164
E-TOP10-24	100-240	24*	10W	90x22,5x115mm	120168
E-TOP18-24	100-240	24*	18W	90x22,5x115mm	120172
E-TOP30-24	100-240	24*	30W	90x40,5x115mm	120134
E-TOP60-24	100-240	24*	60W	90x40,5x115mm	120138
E-TOP120-24	115-230	24*	120W	125x63,5x123,6mm	120158
E-TOP240-24	115-230	24*	240W	125x83x126mm	120182
E-TOP480-24	100-240	24*	480W	125x175x123mm	120192
3-Phase units					
E-TOP120/3W-24	3AC, 400-500V	24*	120W	74,3x123,6x118,9mm	120201
E-TOP240/3W-24	3AC, 400-500V	24*	240W	89x123,6x118,9mm	120202
E-TOP480/3W-24	3AC, 400-500V	24*	180W	124x150x118mm	120194
E-TOP960/3W-24	3AC, 400-500V	24*	960W	275,8x125,9x118,2mm	o.r.

* further possible versions: 5/12/15/48 VDC

Further characteristics

- Cost effective standard power supply
- Worldwide applications
- International certification
- Large variety of types

Battery Charging Computers for Lead-acid, AGM, Gel and Fleece Batteries and Lithium Ion Batteries 300-1200 Watt

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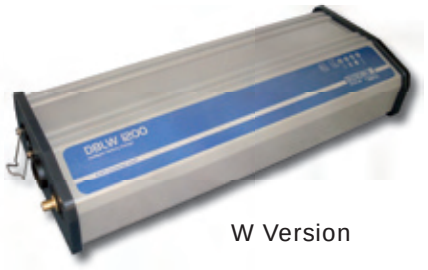

W Version

- **Safe flash-procedure for the DBL700 and DBLW1200**
- **100% on board safety**
- **Option: Refresh mode for regeneration of partially sulphated lead-acid batteries**
- **Option: Version with IP65 protection**

Systems for workshop and boat applications also for external workplaces

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DBL300-14	100-240	14,4/13,2	300W	156x290x81mm	107091
DBL700-14	100-240	14,4/13,2	700W	156x355x81mm	107096
DBLW1200-14*2)	100-240	14,4/13,2	1200W	156x447x81mm	107204

* further possible versions: 7/28 VDC

*2) Profi battery charger with **D-IPS® ACS technology** (explanation on pages 8 and 9)

Further characteristics of the workshop systems

- Protected against environmental influences (moisture, dust and corrosive atmospheres) through
  - Sealed housing
  - Coated modules
- Operation as battery charger and external power supply
- Extensive protection and self-protection functions
- Indication of operation state via display and high power LEDs
- 100% on board safety, protection of on-board electronical system / airbag
- Low temperature resistant to – 40°C

- **Safe flash-procedure for the DBL700 and DBLW1200**
- **100% on board safety**
- **Option: Version with IP65 protection**

Lithium Ion - System

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
1-Phase units					
DBL800-58-M-Li	100-240	max. 58,5	800W	360x321x141mm	107087/0/000
DBLM800-Li-58	100-240	58,5	800W	156x447x81mm	107205
3-Phase units					
DBL5500/3W-Li	3AC 400-500V*	up to 450	5500W	443x495x131mm	o.r.

* 480VAC respectively 400-500VAC

Relevant studies show that the market for Lithium batteries is growing with considerably more than 10% per year. However the sensitive Lithium cells require a very exact charging technique matched to the respective cell chemistry and application, whereby conventional battery chargers are not suitable.

For this reason Deutronic has developed a charging computer with 300W for typical boost charging and long-term trickle charging up to single stages with 10kW, cascadable up to 100KW (E-vehicles, energy buffers).

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Application and project consulting from our development department.

Battery Charging Computers for Lead-acid, AGM, Gel and Fleece Batteries 800-5500 Watt

Standard Design

B Version

World leader in the field of professional charging technology for automobile manufacturers

M Version

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МЛ03

Profi - System

Type	Input VAC	Output VDC	Power	Dimensions Standard version	Item No.
				WxDxH	
1-Phase units					
DBL800-14	100-240	14,4/13,2*	800W	240x295x121mm	107056/0/000
DBL1050-14	100-240	14,4/13,2*	1000W	340x295x146,5mm	o.r.
DBL1200-14	100-240	14,4/13,2*	1200W	340x295x146,5mm	107073/0/000
DBL1201-14*2)	100-240	14,4/13,2*	1200W	340x295x146,5mm	o.r.
DBL1600-14	100-240	14,4/13,2*	1600W	340x295x146,5mm	107063/0/000
3-Phase units					
DBL1050/3W-14-B-HAN*2)	3AC 380-500V	14,4/13,2*	1000W	385x355x115mm	107203/0/000
DBL1200/3W-14-B-HAN*2)	3AC 380-500V	14,4/13,2*	1200W	385x355x115mm	107200/0/000
DBL1600/3W-14-B-HAN*2)	3AC 380-500V	14,4/13,2*	1600W	385x355x115mm	107201/0/000
DBL3000/3W-14	3AC 400V*1)	14,4/13,2*	3000W	443x495x131mm	107212/0/000
DBL5500/3W-14	3AC 400V*1)	14,4/13,2*	5500W	443x495x131mm	o.r.

* further possible versions: 28,8/26,4 VDC
*1) 480VAC respectively 400-500VAC (Wide range input) o.r.
*2) Profi battery charger with **D-IPS® ACS technology** (explanation on pages 8 and 9)

Further characteristics

- Protected against environmental influences (moisture, dust and corrosive atmospheres) through
  - Sealed housing
  - Coated modules
- Operation as battery charger and external power supply
- Extensive protection and self-protection functions
- Indication of operational state via display and high power LEDs
- Comfortable menu navigation / configurable charging parameters
- Menu navigation: English, French, German, Italian, Spanish (more o.r.)
- Built-in communication interface (zukunftssicher durch optionale Firmware-Updates)
- Safety: EN60335, EN60950, UL60950-1, UL1236, EN61046, CSA C22.2 No.60950-1-07, u.a. GS, GOST, PSE

Housing design

- Standard design: 340x295x146,5mm
- B-Version: 355x385x143mm
- M-Version, portable for mobile applications: 360x321x141mm (option M-IP: waterproof)
- W-Version
- OEM design

Options

- Refresh mode for regeneration of partially sulphated lead-acid batteries
- Diagnose der Batteriealterung

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Battery Charging Computers
Smart Charger and Solar Module

Smart charger

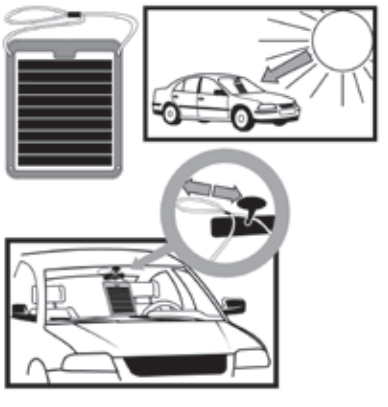
Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
Smart charger					
EBL70-12	100-240	14,4	70W	150x60x30mm	116210

Further characteristics EBL 70
- Desulfation mode
- Various setting modes (automobile, motorcycle and low-temperature charging)
- Automatic storage of programmed settings after power failure

Examples of possible applications
- Boats
- Vehicle distribution center
- Oldtimer
- Motorcycles
- Automobiles
- Lawnmowers
- Tractors

Solar module

- **Trickle charging of batteries, without external mains supply**
- **Description: ESM4**
- **max. 14,3VDC**
- **max. 255mA**
- **Item No.:116199**



Further characteristics of the solar module
- Power feed over OBD2 plug
  Option: battery terminals or cigarette lighter
- Short circuit and return current protection
- Low temperature resistant to – 40°C

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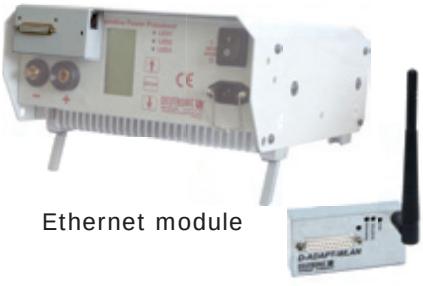
Examples of the Accessories for Battery Charging Computers and References

DBL transport system

External signal lamp



Ethernet module

W-LAN module

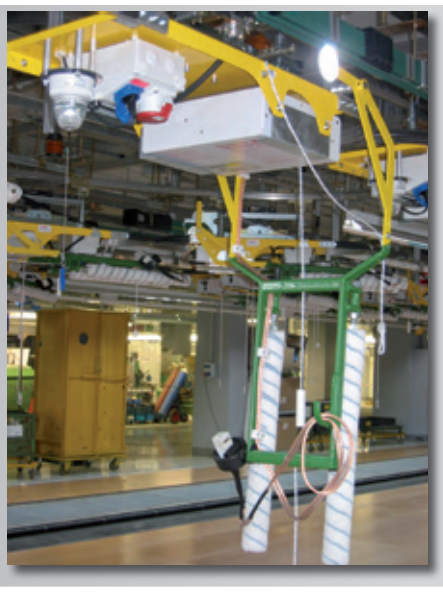
Cable drum

Parameter editor

Conveyor Systeme / Recharging Stations

In worldwide cooperation with various manufacturers of conveyor systems our charging computers are offered and installed as complete systems.

The development of the concepts takes place in close cooperation with our system partners.



References

- Aston Martin
- Audi
- Bentley
- BMW Group
- Bugatti
- Daimler
- Ferrari
- Fiat
- Jaguar
- KIA
- Karmann
- Lamborghini
- Land Rover
- MAN
- Magna Steyr
- Maybach
- McLaren
- Opel
- Peugeot
- Porsche
- Renault
- Rolls Royce
- Seat
- Skoda
- Volkswagen

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Building Automation
12-60 Watt

- Encapsulated power supply, IP67
- Ultra-Low Standby Power <100mWatt
- High efficieny
- Option C: mit Anschlussklemmen

Power Supply Modules for Flush-Mounted Sockets (12/18 Watt)

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				Diameter	
DP12UP-24	100-240	24*	12W	53mmx33mm	101337
DP18UP-24	100-240	24*	12W	53mmx33mm	101337

* further possible versions: 5/12 VDC

Further characteristics

- High operational reliability
- High integration density
- Complete protection against environmental influences (e.g. moisture, dust, vibration)

- Ultra-Low Standby Power

Power Supplies to DIN43880 for Flat Distribution Cabinets (12-60 Watt)

Type	Input VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
D-LP12-24	100-240	24*	12W	90x36 (2TE)x62,6mm	101322
D-LP18-24	100-240	24*	18W	90x36 (2TE)x62,6mm	101324
E-LP30-24	100-240	24*	36W	78x93x56mm	120763
E-LP60-24	100-240	24*	60W	78x93x56mm	120767

* further possible versions: 5/12 VDC

Further characteristics of the D-LP series

- High efficiency
- Ultra Low Standby Power
- Wide adjustment range
- High integration density
- High transient strength
- High operational reliability
- Small dimensions (36mm wide)
- Protected against environmental influences through coated modules

Further characteristics of the E-LP series

- High efficiency
- High performance
- Best price

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DC/DC Converter
for TS 35 DIN Rail
15-120 Watt

- **Wide range input**
- **Electrical isolation**
- **Sustained short circuit proof**

15-50 Watt

Type	Input VDC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
E-TOP15DC12R24	9-18	24*	15W	22,5x90x115mm	120214
E-TOP15DC24R24	18-36	24*	15W	22,5x90x115mm	120220
E-TOP15DC48R24	36-72	24*	15W	22,5x90x115mm	120226
E-TOP30DC12R24	9-18	24*	30W	40,5x90x115mm	120234
E-TOP30DC24R24	18-36	24*	30W	40,5x90x115mm	120240
E-TOP30DC48R24	36-72	24*	30W	40,5x90x115mm	o.r.
E-TOP50DC12R24	9-18	24*	50W	40,5x90x115mm	o.r.
E-TOP50DC24R24	18-36	24*	50W	40,5x90x115mm	120261
E-TOP50DC48R24	36-75	24*	50W	40,5x90x115mm	120267

* further possible versions: 2,5/3,3/5/12/15/24/30/48 VDC

Further characteristics
- High efficieny
- High noise immunity

60-120 Watt

Type	Input VDC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DCM60-24-24	18-36	24*	60W	50x125x125mm	104253
DCM60-48-24	36-80	24*	60W	50x125x125mm	104263
DCM60-80-24	60-120	24*	60W	50x125x125mm	104273
DCM120-60-24	40-90	24*	120W	80x125x125mm	101591
DCM120-80-24	60-120	24*	120W	80x125x125mm	101593
DCM120-120-24	80-170	24*	120W	80x125x125mm	101597
DCM120-230-24	160-310	24*	120W	80x125x125mm	101840
DCM120L-24-24	18-36	24*	120W	63x125x125mm	101803
DCM120L-48-24	36-80	24*	120W	63x125x125mm	101589

* further possible versions: 12/15/28/60 VDC

DC/DC Converter
for Circuit Boards and DIN Rail Mounting
0,25-200 Watt

- **Large module selection**
- **Cost effective**
- **High performance**
- **Encapsulated modules**

High performance modules (0,25-200 Watt)

Power	Input range	Output versions			Sense Input	Short circuit protected	SIL	DIL	TS 35 mounted	Options
			regulated	unregulated						
0,25		s		●			●			H, 1, 2, SMD
1	2:1	s, d	●	●			●			H, 1, 2,SMD
1,5		s, d	●			●		●	●	H, SMD
2		s, d		●		●	●			H 1, 2, SMD
3	2:1/4:1	s, d	●			●		●	●	H, M, UL, SMD
6	2:1/4:1	s, d	●			●		●	●	H, M, UL, SMD
7,5	2:1	s, d	●			●		●	●	H, SMD
10	2:1/4:1	s, d	●			●			●	H
15	2:1	s, d	●			●			●	UL, H
20	4:1	s, d	●			●			●	UL, H
30	2:1/4:1	s, d, t	●		●	●			●	UL, H
50	2:1/4:1	s	●		●	●				UL, H
75	2:1/4:1	s, d	●		●	●				UL, H
100	2:1	s	●		●	●				UL, H
150	2:1	s	●		●	●				UL, H
200	2:1	s	●		●	●				UL, H

* s=single, d=dual, t=triple

Options

- ● 1 Temperature range -20°C bis +85°C
- ● 2 Temperature range -45°C bis +85°C
- ● H 3kV isolation voltage
- ● UL UL certification
- ● M Metal housing
- ● SMD SMD version

Further characteristics

- Input voltage range: from 9 VDC to 75 VDC
- Output voltage range: from 2,5 VDC to 48 VDC

- **24-pol DIL Raster**
- **Very high efficieny**
- **Metal housing, screened**

Switching Controller not electrically isolated (6-24 Watt)

Type	Input VDC			Output VDC				Power	Dimensions	Item No.
	4,7-6VDC	9-32VDC	16-32VDC	3,3	5	12	15		WxDxH	
EDR	●	●	●	●	●	●	●	7/10/20/24W	32x20x10mm	o.r.

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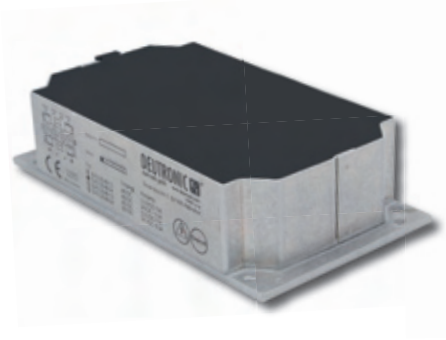
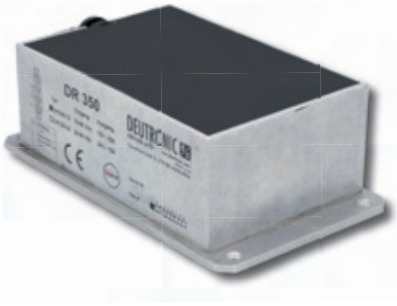
DC / DC Converter
for Vehicles and Extended Environmental Requirements

Forklift Trucks, Electrical and Hybrid Vehicles, MIL, Railway and Industrial Applications





- High flexibility
- Fully surpressed
- Parallel connectivity
- Encapsulated modules
- Shock and vibration resistant
- Increased transient strength
- Option: E1 certification

CE

DVC - electrically isolated

Type	Input nom. VDC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DVC75-24-24	24 (17-40)	24*	48W	110(93)x100(68)x38mm	105102
DVC75-36-24	36 (25-70)	24*	67,2W	110(93)x100(68)x38mm	105053
DVC75-48-24	48 (33-90)	24*	75W	110(93)x100(68)x38mm	105092
DVC75-80-24	72/80/96/110 (56-154)	24*	75W	110(93)x100(68)x38mm	105093
DVC125-24-24	24 (17-40)	24*1)	120W	156(140)x85x40 mm	105079
DVC125-36-24	36 (25-70)	24*1)	132W	156(140)x85x40 mm	105107
DVC125-48-24	48 (33-90)	24*1)	132W	156(140)x85x40 mm	105080
DVC125-80-24	72/80/96/110 (56-154)	24*1)	132W	156(140)x85x40 mm	105082
DVC150-48-24	48 (33-90)	24*	150W	156(140)x85x40 mm	105089
DVC150-80-24	72/80/96/110 (56-154)	24*	150W	156(140)x85x40 mm	105091
DVC251-12-24	12 (10-20)	24*2)	168W	153(150)x131(100)x50mm	105121
DVC251-24-24	24 (19-45)	24*2)	228W	153(150)x131(100)x50mm	105123
DVC251-36-24	36 (25-80)	24*2)	251W	153(150)x131(100)x50mm	105129
DVC251-48-24	48 (32-100)	24*2)	251W	153(150)x131(100)x50mm	105125
DVC251-80-24	72/80/96/110 (56-154)	24*2)	251W	153(150)x131(100)x50mm	105127
DVC251-EUT-12-24	12 (8,5-20)	24*2)	144W	153(150)x131(100)x50mm	105131
DVC251-EUT-24-24	24 (17-40)	24*2)	192W	153(150)x131(100)x50mm	105133
DVC500-12-24	12 (10-20)	24*3)	o.r.	222(220)x166(122)x65(50)mm	o.r.
DVC500-24-24	24 (17-40)	24*3)	o.r.	222(220)x166(122)x65(50)mm	o.r.
DVC500-36-24	36 (25-70)	24*3)	500W	222(220)x166(122)x65(50)mm	105119
DVC500-48-24	48 (33-90)	24*3)	500W	222(220)x166(122)x65(50)mm	105115
DVC500-80-24	72/80/96/110 (56-154)	24*3)	500W	222(220)x166(122)x65(50)mm	105117
DVC502-12-24	12 (10-20)	24*3)	502W	222(220)x166(122)x65(50)mm	105151
DVC502-24-24	24 (17-50)	24*3)	502W	222(220)x166(122)x65(50)mm	o.r.
DVC502-36-24	36 (25-80)	24*3)	502W	222(220)x166(122)x65(50)mm	o.r.
DVC502-48-24	48 (32-100)	24*3)	502W	222(220)x166(122)x65(50)mm	105155
DVC502-80-24	72/80/96/110 (54-154)	24*3)	502W	222(220)x166(122)x65(50)mm	o.r.

* further possible versions: 5/12/15/20 VDC
*1) further possible versions: 5/12/15/20 VDC
*2) further possible versions: 12/36/48/60 VDC
*3) further possible versions: 12 VDC

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DC / DC Converter
for Vehicles and Extended Environmental Requirements

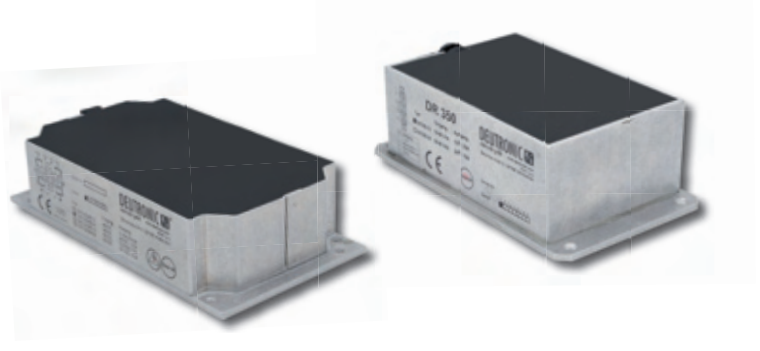
Forklift Trucks, Electrical and Hybrid Vehicles, MIL, Railway and Industrial Applications

- For hybrid and electrical vehicles
- No power-on current surge
- Efficiency 93%
- Option: E1 certification
- Option: Inhibit Funktion
- Option: Special output voltages e.g. 13,5 / 13,8 / 14,2
- Option: Customer spec DesignIN

DVCH - Direct current HV converter (electrically isolated)

Type	Input nom. VDC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DVCH350-50Z-14	185 (130-350)	14*	350W	162(135)x150(149)x73mm	o.r.
DVCH350-100Z-14	370 (230-500)	14*	350W	162(135)x150(149)x73mm	o.r.
DVCH350-150Z-14	555 (400-780)	14*	350W	162(135)x150(149)x73mm	o.r.
DVCH450-50Z-14	185 (130-350)	14*	450W	162(135)x150(149)x73mm	o.r.
DVCH450-100Z-14	370 (230-500)	14*	450W	162(135)x150(149)x73mm	o.r.
DVCH450-150Z-14	555 (400-780)	14*	450W	162(135)x150(149)x73mm	o.r.

* further possible versions: 28 VDC



- High flexibility
- Fully surpressed
- Parallel connectivity

DR - not electrically isolated

Type	Input nom. VDC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DR25N-12	24-96	12	25W	130(83)x80(70)x37mm	106062
DR100N-12	24-48	12	100W	130(83)x80(70)x37mm	106065
DR125N-24	48-80	24*	125W	130(83)x80(70)x37mm	106060
DR150N-24	48-80	24	150W	130(83)x80(70)x37mm	106063
DR160-24-12	80 (64-96)	12/24	160W	130(83)x80(70)x37mm	104970
DR350-24	48-80	24*	350W	130(83)x80(70)x37mm	106067

* further possible versions: 12/13,5 VDC

Characteristics of the DVC, DVCH and DR

- High efficieny
- Low standby power
- Increased transient strength
- Shock resistant / resistance to vibration
- Encapsulated modules (protection against moisture, dust and corrosive atmospheres)

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Equipment Power Supplies
1,5-40 Watt

- Micro design (DP5M, DP8M, DP15M)
- Single, dual and triple output
- Protection class II

Encapsulated Power Supply Modules (5-40 Watt)

Type	Input VAC	Output versions*	Output VDC	Power	Dimensions	Item No.
					WxDxH	
DP5M-24	100-240	s	24*	5W	56,2x40x20,8mm	101438
EAA5-24	100-240	s, d	24*	5W	55x45x20,5mm	o.r.
DP8M-24	230	s	24*	8W	56,2x40x20,8mm	101444
DP10E-24	100-240	s, d	24*	10W	74,3x53x27,7mm	o.r.
EAA10-24	100-240	s, d	24*	10W	64,0x45,0x21,5mm	o.r.
DP15M-24	230	s	24*	15W	56,2x40,0x20,8mm	101405
EAA20-24	100-240	s, d, t	24*	20W	70,0x48,0x22,0mm	o.r.
DP25M-24	230	s	24*	25W	89,5x64x27mm	101355
DK25-24	93,5-265	s, d, t	24*	25W	123,6x71,3x49mm	101460
EAA40-24	100-240	s, d, t	24*	40W	89,0x63,5x20,0mm	o.r.

* further possible versions: 3,3/±5/7/9/±12/±15/±24/28/ VDC

Further characteristics
- PCB mounting
- Mounting with screw fastening
- Mounting adapter for TS35 DIN rail

- Linear voltage transmission
- DH: Not electrically isolated
- DHP: Electrically isolated
- Low residual ripple

High Voltage Modules (1,5 Watt)

Type	Input VDC	Output VDC							
		500	-500	1000	-1000	2000	-2000	3000	-3000
DH12	12VDC (2-12V)	●	●	●	●	●	●	●	●
DH24	24VDC (2-24V)	●	●	●	●	●	●	●	●

Further characteristics
- Low stray magnetic field
- Protection against high voltage flashover
- Option: Voltage isolation (DHP)

Equipment Power Supplies
5-30 Watt

u.a.

- CEC and Energy Star compliant
- Primary switched
- Linear controller (only DLS)
- Worldwide operation
- Versions with medical certification
- Option: PSE certification

Wall mount plug in adapter (5-30 Watt)

Type	Input nom. VAC	Output versions*	Output VDC	Power	Dimensions	Item No.
					WxDxH	
ESC5G-12	100-240	s	12*	5W	72x52x35mm	116408
DLS5-24*3)	230	d, t	5V/24*1)	6W	52x68x112mm	102102
DSP10-24*3)	100-240	s	24*2)	10W	85x55x47mm	102036
ESC10G-24	100-240	s	24*2)	10W	72x46x35mm	116418
ESC15G-24	100-240	s	24*2)	15W	72x52x35mm	116428
ESC15C-24	100-240	s	24*2)	15W	80,6x47,9x43,3mm	115765
DSP25-24*3)	100-240	s, d, t	24*2)	25W	112x68x52mm	102005
ESC25G-24	100-240	s	24*2)	25W	81x56x48mm	116445
ESC30G-24	100-240	s	24*2)	30W	107,8x57,6x32,6mm	116455
Medical certification						
DSP25-24MED*3)	100-240	s	24*2)	25W	52x68x112mm	102005MED
ESC30-24/MED	100-240	s	24*2)	30W	108,7x62x36,7mm	115730

* s=single, d=dual, t=triple

* further possible versions: 5/6/6,5/7/7,5/8/9/10 VDC
*1) further possible versions: 5V/±12V, 5V/±15V, ±12V, ±15V
*2) further possible versions: 3,3/5/7/9/12//15/18/28/48/69 usw. VDC
*3) These versions are only availabke on request with CEC and Energy Star compliance.

Further characteristics

- Versions with medical certification
- Universal mains plug - exchange system
- Customer specific plug configuration
- Low cost

Equipment Power Supplies
5-250 Watt

- CEC and Energy Star compliant
- Primary switched
- Versions with medical certification
- Option: D-IPS Technology (DTP251)
- Option: PSE certification

u.a.

Table-top Power Supplies (5-250 Watt)

Type	Input VAC	Output versions*	Output VDC	Power	Dimensions	Item No.
					WxDxH	
DLT12-12*2)	230	d, t	±12	6W	52x68x112mm	102206
DTP10-24*2)	100-240	s	24*	10W	85x55x47mm	102086
ETC20-24	100-240	s	24*	20W	110x50x30mm	115596
DTP25-24*2)	100-240	s, d, t	24*	25W	112x68x52mm	102055
ETC25-5-24	100-240	d	+5V/+24V*1)	25W	132x58x30mm	115643
ETC36G-24	100-240	s	24*	36W	110x50x20mm	116336
ETC45G-24	100-240	s	24*	45W	132x58x30mm	116345
DTP60-24*2)	100-240	s	24*	60W	75x140x40mm	102076
ETC70G-24	100-240	s	24*	70W	132x58x30mm	116364
ETC100G-24	100-240	s	24*	100W	150x70x35mm	117377
ETF150-24	100-240	s	24*	150W	171x72x40mm	115753
ETF180-24	100-240	s	24*	180W	170x85x41mm	115756
DTP250-24*2)	100-240	s	24*	250W	156x81x290mm	102096
Medical certification						
ETS15-24/MED	100-240	s	24*	15W	104x42x31mm	120812
ETH25-24/MED*2)	100-240	s	24*	25W	110x58x32,3 mm	120796
DTP25-24MED*2)	100-240	s	24*	25W	52x68x112mm	102055MED
ETC30-24/MED	100-240	s	24*	30W	110x50x30mm	115736
ETH45-24/MED1*2)	100-240	s	24*	45W	125x61,78x32,5mm	120784
ETC60-24/MED	100-240	s	24*	60W	132x58x30,5mm	115743

* s=single, d=dual, t=triple

* further possible versions: 3,3/5/7/9/12//15/18/28/48/69 usw. VDC
*1) further possible versions: +3,3V/+5V, 5V/±12V, 5V/±15V
*2) Diese Varianten sind nur auf Anfrage mit CEC und Energy Star Level erhältlich.

Further characteristics

- Linear controller (only DLS) single-, dual-,triple output
- High performance versions in a dense aluminium housing (DTP250, DTP251)

Equipment Power Supplies
10-150 Watt

- Open Frame rack mount power supply for industry, flat construction, available with PFC dependent on type
- Versions with medical approval
- Wide range input
- Efficieny factor up to 83% (type dependent)
- Overvoltage protected / Overload protected

Open Frame

Type	Input VAC	Output versions*	Output VDC	Power	Dimensions	Item No.
					WxDxH	
EFM10-24	100-240	s	24*	10W	65x45x23mm	120907
EFM20-24	100-240	s	24*	20W	88,9x50,8x20,32mm	120924
EPS65-24	100-240	s	24*	65W	127x76,2x37	120934
EPP100-24	100-240	s	24*	100W	222x62x35mm	122586
EPP150-24	100-240	s	24*	150W	222x75x41mm	121157
Medical certification						
EPS30-24MED	100-240	s	24*	30W	102x66x25mm	120646MED
EPS45-24MED	100-240	s	24*	45W	127x76,2x28mm	120556MED
EPS65-24MED	100-240	s	24*	65W	127x76,2x42mm	120568MED

* s=single

* further possible versions: 3,3/5/7,5/12/13,5/15/27/48 VDC

- 4TE - 84TE, 3HE
- Low Voltage DC-Input
- Pin-assignment selectable
- Coated modules

19“ Power Supplies, DC/DC Converter (35-120 Watt)

Type	Input nom. VAC	Output VDC	Power	Dimensions	Item No.
				WxDxH	
DN35-24	115 / 230*1)	24*	35W	110x173,93mm	o.r.
DN60-24	115 / 230*1)	24*	60W	110x173,93mm	o.r.
DN120-24	115 / 230*1)	24*	120W	110x173,93mm	o.r.
Wide range input					
DN35W-24	100-240*2)	24*	35W	110x173,93mm	100039
DN60W-24	100-240*2)	24*	60W	110x173,93mm	o.r.

* further possible versions: 5/10/12/15/28/48/54/69 VAC
*1) 115/230VAC (±20%) internally switchable, 240-370VDC with 230VAC inputs
*2) 100-240VAC (97-260VAC), 130-370VDC

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Application and project consulting from our development department.

Equipment Power Supplies
25-500 Watt

E - Line

Type	Input VAC	Output versions*	Output VDC	Power	Dimensions	Item No.
					WxDxH	
ES25-24	100-240	s	24*	25W	99x97x36mm	120393
ES40-24	100-240	s	24*	40W	129x98x38mm	120143
ES60-24	100-240	s	24*	60W	159x97x38mm	120151
ES100F-24	115/230	s	24*	100W	199x98x38mm	120413
ESP100-24	100-240	s	24*	100W	179x99x45mm	121606
ES150-24	115/230	s	24*	150W	199x110x50mm	120404
ESP150-24	100-240	s	24*	150W	199x99x50mm	122000
ESP200-24	100-240	s	24*	200W	199x99x50mm	121706
ES240-24	115/230	s	24*	240W	190x93x65mm	120593
ESP320-24	100-240	s	24*	320W	215x115x50mm	120656
ESP500-24	100-240	s	24*	500W	17x120x93mm	120621
Main output -5%/+10% selectable						
ED60-B	100-240	d, t	5/24*[1)]	60W	159x97x38mm	120696
ET60-B	100-240	d, t	5/12/-12*[1)]	60W	159x97x38mm	120688
ED120-B	115/230	d, q	5/24*[1)]	120W	199x110x50mm	120693
EQ120-D	115/230	d, q	5/12/24/-12	120W	199x110x50mm	120692

* s=single, d=dual, t=triple, q=quad

* further possible versions: 5/12/15/48 VDC
*[1)] further possible versions: **d:**5/12, **t:**5/12/-5, 5/15/-15 **q:**5/12/-5/-12 , 5/15/-5/-15 VDC

Characteristics

- Cost effective standard power suppiles
- Worldwide operation
- International certification
- Mounting option for TS35 DIN rail
- Large variety of types

We already have your special solution in stock!

High protection against piracy through individual software e.g. by modification and special versions of existing units

YOUR LOGO
YOUR COLOUR
YOUR SOFTWARE

Detailed data sheets can be found under www.deutronic.com.

Application and project consulting from our development departments.

- Customer specific programmable software
- Customer specific designations = higher customer security
- Shortened development times through high degree of system integration
- Individual, customer specific special equipment from the corporate group EDWANZ AG. Combine your power electronics + process technology + Software in one unit, we manufacture complete equipment including your electronics.
- Combine the advantages and know-how of serial produced equipment to a custom-made industrial device.
- Use the know-how of the EDWANZ Group. Our corporate group, including numerous development teams and in-house EMC lab is at your disposal.
- Power supplies, power electronics, process technology, software, design, manufacture of small DC/DC converter up to complete special devices.
- Certifications UL, VDE, TÜV, VDS, PSE, GOST, etc.
- Certification for:
  - Medicine according to EN 60601-1
  - Road traffic according to KBA (E1)
  - Railway applications according to EN 50155, ...
  - Shipping according to Germanischer Lloyd (GL)
  - Military according to VG und MIL

- Accellerates market introduction -

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Customer Specific Solutions

DBL800 IP-MIL
Charger for Military Equipment

- Firmware expansion and individual parameterset, to realise thespecial connection procedure for satellite modems
- Customer specific design of the output with military plug

1200W, 1600W, IP54, IP67
for Li-batteries

DBL300-28 Special Version
Customer Specific Charger

- For specially customised charger program control
- Customer specific housing design with specific charger cable (e.g. with an English mains cable)
- Individual cable glands

DBL600-14-Li:
600 Watt charger for LI-batteries with mains and 12VDC input
suitable for model making

D-TOP500-MED
Power Supply with Certification

- On request we can develop and manufacture every power supply with MED certification

DXC6000/3-MIL
Power Supplies for Mobile Military Radio Systems

- Customised equipment firmware for controlling the connection behaviour and the output voltage
- Extremely low interference level
- EMC suppressed for MIL applications according to VG standard

AC3 - 3 AXIS Flight Attitude Controller for Model Helicopters

- Simulates and replaces the mecanical components typical required on model helicopters (e.g. flybar rod)
- Can also be used in professional applications

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Examples for System Engineering

Intelligente Power Supply Systems + Software and Embedded Computer + System-komponenten and Mechanic = Complete Systems

DSSE3000 / DSSE6000
Static Exciters for Three-Phase AC Generators in Small Power Stations

The operators of small power stations have previously had to cope with typical problems:

- Wear and tear of ther exciter
- High losses in the field current circuit
- Contamination in the generator windings caused by dust from carbon brushes
- High maintenance costs
- High repair and maintenance costs
- Procurement of the correct brush types

These often lead to stopages of the equipment.
For this reason Deutronic has developped the DSSE3000 / DSSE6000.

The shaft generator is replaced by an electronic direct current generator with extremely robust MIL components.

Thereby giving the following advantages:

- No stopage times for maintenance, due to carbon wear and tear
- No carbon dust
- No commutator problems
- No more „collector-Abdrehen“

Voltage and cos φ regulator are easy to realise with standard components.
Detailed fault messages are available at the DSSE interface.

More under www.deutronic.com / systemtechnik

Additional System Solutions

- Handling systems for automatic test equipment
- Intelligent conveyor power supplies as well as energy and battery monitoring integrated in conveyor systems for vehicle manufacture
- Recharging stations for vehicles
- Energy filling stations for E vehicles and energy buffering systems
- Control and UPS solutions for wind turbine or hydroelectric plant

EMC - Engineering

We don‘t only measure - we also suppress your equipment as a cost-effective service

- EMC - investigations
- CE - conformity tests
- Development associated tests
- EMC - consultancy
- Proposals for suppression solutions

Our own EMC lab provides not only Deutronic Elektronik GmbH itself with fast completion and certification times for its high-tech products. The diversified knowledge and experience at Deutronic for the suppression of electronic circuits gained over many years, is also used by companies from the consumer electronics branch and also by industry as a whole as a service in EMC engineering.

Test possibilites in detail:

- Conducted interference emmission
  EN55011
- Radiated interference emmission
  EN55011
- Noise immunity against conducted interference
  EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
- Noise immunity against radiated HF fields
  EN61000-4-3
- Noise immunity against electrostatic discharges
  EN61000-4-2

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Application and project consulting from our development department..

Deutronic Test Systems

for serial production and qualification tests

- Individual functional and production tests for your equipment and modules according to the standards 2006/42/EG, 2006/95/EG, 2004/108/EG
- Reliable and automatic test sequences
- Minimise test times and production costs
- Freely programmable, mask oriented settings of test programs and inspection sequences
- Information, documentation and archiving in modern SQL databases
- Customised solutions for your application according to your specifications
- Adherence to all current standards and safety regulations

Through the individual configuration of existing basic modules, the creation of a customer specific system using the test system software Vites can be undertaken cost-effectively and in the shortest time.

Design and consulting service

Diverse Requirements - one solution!

Test Software

System control
System inspection
System adaption
System security

Information system
Quality data
Management
Statistics

Programming
Program creation
Inspection programs

Documentation
Technical records
Specifications
Technical drawings

Logging
Failure protocol
Inspection protocol
Inspection instruction

Communication
Data transfer
Remote maintenance
Remote diagnostics

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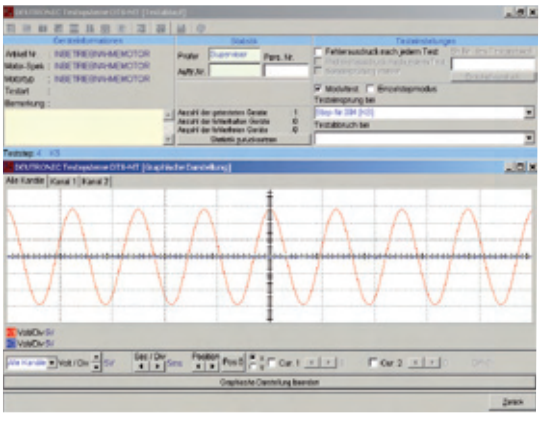
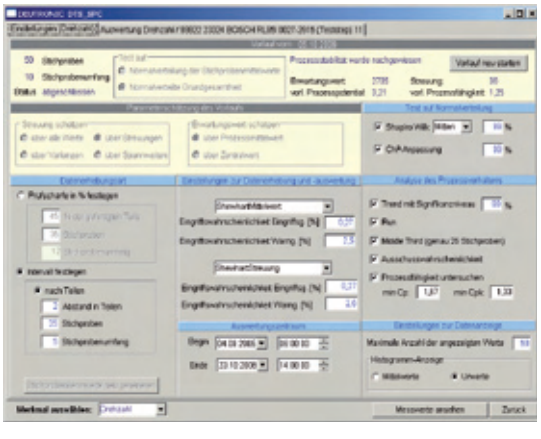
We develop your test system according to your individual requirements!

- Simple and fast programming
- Graphical interface under Windows
- Modern SQL databank
- Information, documentation and archiving of test data and measured values
- Update capabilities - your safe investment for the future
- Inspection data storage and statistic analysis



- Acquisition of partial discharges
- Overvoltage detection on short-circuit
- Acquisition of flashovers
- Remote control via Ethernet
- Evaluation of a PD impulse is adjustable to specific applications according to the standard EN 60270

- Evaluation of the process behaviour using static hypotheses tests
- Clear graphical interface
- Versatile setting possibilities regarding data collection and evaluation
- Calculation of the quality coefficients



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Wir entwickeln Ihr Testsystem nach Ihren individuellen Vorgaben!

Customer Specific Test System

Mechanical construction, product specific Measurement and individual software functions are implemented according to customer requirements.

Example of a serial inspection system from our production

Ventilator Test System DTS-MT

Test systems for radial, axial, diagonal and gas blowers

Definable test scope:

- Safety tests (HV test, protective earth conductor test, etc.)
- Functional tests (measurement of voltage, current, frequency, etc.)
- Physical tests (torque, speed, structure-borne noise measurement, etc.)
- Customer specific solutions

Transformer Test System DTS-TR

Test system for electronic goods with windings such as transformers, chokes, mains filters, etc.

Definable test scope:

- Safety tests (HV test, protective earth conductor test, leakage current, etc.)
- Performance tests (measuring the primary and secondary voltages, currents and power)
- Load tests (testing the outputs with different load increments)
- Winding tests (resistive, faults between turns, partial discharge etc.)
- Customer specific solutions

Tacho-Generator Test System

Test systems for diverse tacho-generator systems

Definable test scope:

- Functional tests (level measurement, rise and decay time, speed, pulse count, phase shift, etc.)
- Additional functions (communication with the most common encoder interfaces).

Automotive Test System DTS-PS

Test system for onboard chargers, vehicle heaters, etc.

Definable test scope:

- Safety tests
- Performance tests (measurement of voltage, current, power)
- Tests (power factor, phase angle, harmonic waves, ripple/spikes/noise, etc.)
- Functional tests (digital inputs and outputs, load tests, etc.)
- Customer specific solutions
- CAN bus
- K bus

Safety System DTS-ST

Test systems for all electronic components.

Definable test scope:

- Safety tests (HV test, protective conductor test, isolation test, leakage current test, etc.)
- Functional tests (digitale input and outputs, analogue inputs and outputs, etc.)
- Customer specific solutions

Turntable System DTS-DT

For complex, contact protected test processes in the production. Available as a two or more cell system. By using turntables, new test pieces can be placed on the system and connected while the testing of others is in progress.

Power Supply Test System DTS-PS

Test systems for electronic control and communication equipment.

Definable test scope:

- Functional tests (digitae inputs and outputs, electronic loads, analogue inputs and outputs, etc.)
- Communication test (CAN, RS232, IEEE, Ethernet etc.)
- Customer specific solutions

Motor Test System DTS-MT for Servo Motors

Test systems for AC and DC servo motors

Definable test scope:

- Safety tests (HV test, protective earth conductor test, etc.)
- Performance tests (measurement of voltage, current, power)
- Physical tests (KE and EMF test, speed and direction measurement structure-borne noise measurement, etc.)
- Functional tests (tacho-generator signals, parameter control, etc.)
- Customer specific solutions

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Functional Test System DTS-FT for Equipment with Windings

Test systems for special equipment with windings such as input filters, high voltage chokes, welding transformers, etc.

Definable test scope:

- Functional tests (inductivity, resistance, surge voltage, spectrum analysis, partial discharge safety test, etc.)

Test system DTS–FT for Proximity Sensors

Test systems for capacitive, inductive and magnetic proximity sensors.

Definable test scope:

- Functional tests (switching behaviour dependant on the sensing gap, power consumption, control and evaluation of digital signals, control of status displays such as LEDs)

Stator Test System

Test systems for stators and rotors from motor manufacturing.

Definable test scope:

- Functional tests (partial discharge, faults between turns, resistance, high voltage, etc.)

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The Corporate Group

We bundle our know-how and our strengths for you

Deutronic Testsystem

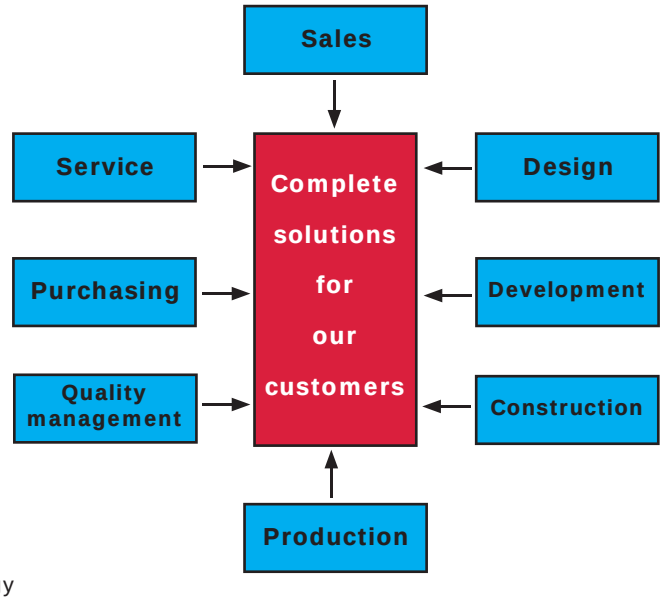
Application and project consulting from our development departments.

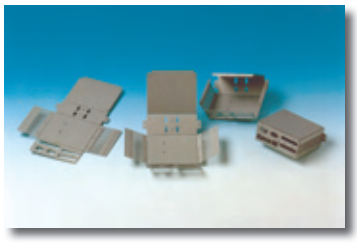
Components	Corporate group
Development Project Management Software (Vites) System manufacture Power-supply Know-how Training, maintenance Measurement / bus connections	DEUTRONIC elektronik gmbh Power-Supplies-Electronics ▪ Test- and Measurement Systems ▪ EMC-Lab
Cabinet manufacture Construction Transformers Controllers Know-how Functional Automation	SEDLBAUER AG Electromechanics ▪ Device Engineering ▪ Electronics ▪ Telecommunications EDWANZ group
Bus systems Development Industrial networks Control technology Visualisation Software	b-plus GmbH Automotive ▪ Automation ▪ Embedded System Solutions EDWANZ group
Mech. construction Transport Systems Conveyor systems Installation partner Service partner	Sedlbauer EKS GmbH Sedlbauer ▪ Entwicklung ▪ Konstruktion ▪ Service ▪ GmbH EDWANZ group
System components Service	Project partner worldwide

Customer Specific Complete Solutions - one-stop shopping!

- Certification to DIN EN ISO 9001:2000 and DIN EN ISO 13485:2003 (medical tech.)
- Production with high vertical range of manufacture and most modern equipment e.g. 4kW laser for sheet metal processing up to 25 mm, high speed punch machine, welding robot, CNC bending machine, paint shop, ...)
- Cost-effective serial production
- ESD safe module production
- Diverse IEC/UL certification
- CL2 welding certification to DIN EN 15085-2 and DIN EN 1418

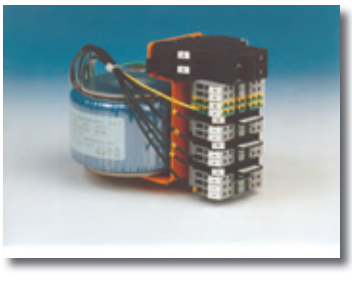
Project Management





Mechanical modules
and spare parts (serial production)

Medical isolation
transformers



Toroidal core transformers and
modules, i.e. for medical technology

Power supply modules
for industry and medical

Racks, cabinets, module racks,
fibre-optic connector and
distribution technology (Telekom)

Terminals and display housings
to customer specification

Automats to customer

b-plus - Enthusiasm meets Technology

automotive

Development of generic software, drivers and test system hardware for the automobile industry, e.g. for CAN communication and measurement technology or test routines in vehicles

CANTucan - CAN Gateway

Rest bus simulation
Signal manipulation
Parameterisation using GUI
Gateway function

-> cantucan.b-plus.com

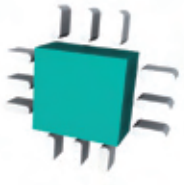
automation

Software development and components for the control and automation in mobile applications e.g. in agricultural, commercial and municipal vehicles with an emphasis on motor and hydraulic control

TruckController

Diagnostic unit for the J1939
Set-up of CANBus in trucks

-> truckcontroller.b-plus.com



embedded system solutions

Hard and software design for fieldbus connections and integrated computers, e.g. carrier pcbs for CPUs, drivers and firmware for communication interfaces and peripheries operating, for instance, under Windows CE and XP/XPembedded

Baseboards for CPU modules
X86 based CPU modules
I/O components

-> embedded.b-plus.com

Find out more on our website www.b-plus.com

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system integrator

kontron Certified Design Partner

CiA member

Distribution Partners - National

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www.ibk-berlin.de
Email: kromer@ibk-berlin.de

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Pfeilshofer Weg 40
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Peres GmbH
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PS Industrievertretungen
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71404 Korb
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www.haas-stark.de
Email: info@haas-stark.de

Power & Light Distribution
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Email: schlemermeyer@pl-dis.com

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