Charging Systems

Intelligent Charging Systems for Vehicle production line and workshop

Power under control

DEUTRONIC
elektronik gmbh

Power-Supplies-Electronics ▪ Test- and Measurement Systems ▪ EMC-Lab

Advanced Technologies EDWANZ group

www.deutronic.com

2010/2011

Deutronic, specialist in power electronics is offering intelligent battery charging systems and on-board power supplies for more than 25 years. These systems have been developed continuously further in close cooperation with car manufacturers, especially BMW AG. Therefore they meet the latest requests of automobile technology.

The Deutronic Elektronik GmbH is leading supplier in this field with service worldwide and distribution partners. The powerful devices can be used both in workshop application and for example in vehicle final assembly as line power supply.

The main purpose in workshops is buffering during diagnosis and programming (flashing) on the cars as well as safe on board charging of lead- / gel- / AGM / VRLA batteries. The future-proof Deutronic battery charging computers can be used for commissioning of new cars and battery maintenance on service as well as final assembly of the cars.

Contents

CE

W Design

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

Systems for workshop/ rework and also for external workplaces

Type	Input nom. VDC	Output Voltage	Output Current	Power	Dimensions	Item No.
					WxDxH	
DBL300-14	100-240	14,4/13,2*	20A	300W	156x290x81mm	107091
DBL300-28	100-240	28,8/26,4	10A	300W	156x290x81mm	107092
DBL700-14	100-240	14,4/13,2*	45A	700W	156x355x81mm	107096
DBL700-28	100-240	28,8/26,4	23A	700W	156x355x81mm	107097
DBLW1200-14*[1)]	100-240	14,4/13,2*	60A (max.80)	1200W	156x447x81mm	107204
DBLW1200-28*[1)]	100-240	28,8/26,4	30A (max.40)	1200W	156x447x81mm	o.r.

* further possible versions: 7/28 VDC

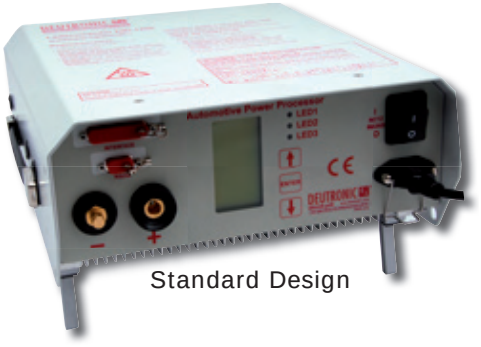
*[2)] Professional battery charger featuring **D-IPS® technology** input stage (explanation on pages 18 and 19)

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
- 100% on board safety, protection of on-board electronical sytem / airbag
- Low temperature resistant to – 40°C

Professional - Systems

B Design



Standard Design

M Design

amongst others

Systems for use in vehicle production line and in workshops

Type	Input nom. VDC	Output Voltage	Output Current	Power	Dimensions Standard Version	Item No.
					WxDxH	
1-Phase units						
DBL800-14	100-240	14,4/13,2*[1)]	45A (max.54A)	800W	240x295x121,0mm	107056/0/000
DBL1050-14	100-240	14,4/13,2*	70A (max.74A)	1000W	340x295x146,5mm	o.r.
DBL1200-14	100-240	14,4/13,2*	80A (max.90A)	1200W	340x295x146,5mm	107073/0/000
DBL1600-14	100-240	14,4/13,2*	90A (max.105A)	1600W	340x295x146,5mm	107063/0/000
3-Phase units						
DBL1050/3W-14-B-HAN*[2)]	3AC 380-500V	14,4/13,2*	70A (max.74A)	1000W	385x355x115mm	107203/0/000
DBL1200/3W-14-B-HAN*[2)]	3AC 380-500V	14,4/13,2*	80A (max.90A)	1200W	385x355x115mm	107200/0/000
DBL1600/3W-14-B-HAN*[2)]	3AC 380-500V	14,4/13,2*	90A (max.105A)	1600W	385x355x115mm	107201/0/000

* further possible versions: 28,8/26,4 VDC

*[1)] 480VAC respectively 400-500VAC (Wide range input) o.r.

*[2)] Professional battery charger featuring **D-IPS® technology** input stage (explanation on pages 18 and 19)

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 (future proof through optional Firmware-Updates)
- Safety: EN60335, EN60950, UL60950-1, UL1236, EN61046, CSA C22.2 No.60950-1-07, amongst others GS, PSE

CE

Systems for reliable energy supply during motor start and LIP (Line-Inline programming)

Type	Input nom. VDC	Output Voltage	Output Current	Power	Dimensions Standard Version	Item No.
					WxDxH	
3-Phase units						
DBL3000/3W-14	3AC 400V*[1)]	14,4/13,2*	200A	3000W	443x495x131mm	107212/0/000
DBL5500/3W-14	3AC 400V*[1)]	14,4/13,2*	260A (max.360A)	5500W	443x495x131mm	o.r.

*further possible versions: 28/60/120VDC
*[1)]480VAC bzw. 400-500VAC (Wide range input) o.r.

Further characteristics

- Protected against environmental influences (moisture, dust and corrosive atmospheres) through:
  - Sealed housing
  - Coated modules
- Prevention against environmental stress due to protection class IP42
- Independent of orientation because of internal fan
- Battery charger and adjustable power supply
- Extensive protection functions and self-protection functions
- Indication of operation state via display and high power LEDs
- Comfortable menu navigation / charging parameter configurable
- Menu navigation: German, English, French, Italian, Spanish (others on request)
- Built-in communication interface (future proof due to Firmware-Updates)

EBL70 - Smart Charger

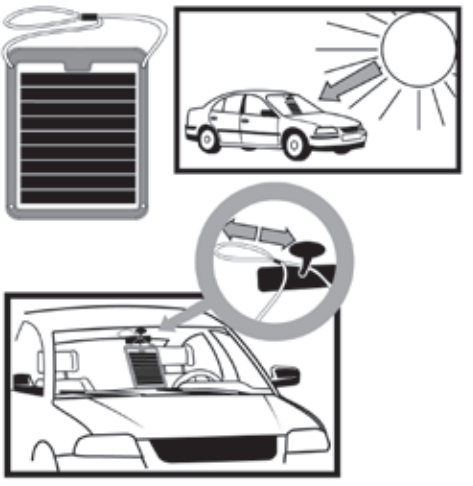
Type	Input nom. VDC	Output Voltage	Output Voltage	Power	Dimensions	Item No.
					WxDxH	
Battery Charger						
EBL70-12	100-240	14,4	max.5A	max.70W	150x60x30mm	116210

Further characteristics EBL 70

- Desulfation mode
- Various setting modes (automobile, motorcycle and low-temperature charging)
- Automatic storage of programmed settings after power failure
- Safety acc. to EN60335, protection IP40
- AC/DC input 230VAC / 50Hz, 200 - 375VDC
- Safety Class II, without protective earth conductor
- Pluggable to cigarette lighter
- Overload / over temperature protection
- Reverse polarity protection
- Overvoltage protected
- 100% Burn-In (full-load)

Applicable for:

- Motorcycles
- Vehicles
- Lawnmowers
- Boats
- Vehicle distribution center
- Vintage cars



Solar Module

Type	Input nom. VDC	Output Voltage	Output Current	Power	Dimensions	Item No.
					WxDxH	
Solar Module						
ESM4 (OBD2)*	Sun	14,3	max.255mA	4W	265x320x15mm	116199

*order option: battery terminals or cigarette lighter

Characteristics Solar Module

- The solar battery charger ESM4 is a solar-powered charging system for the charging and charge conservation of 12 volt leaded starter batteries. It can be combined with a maximum of two additional solar battery chargers to boost performance.
- The solar panel is implemented in state-of-the-art thin-film technology and consists of a glass/film structure. It is softly embedded in an external break-proof frame made of polycarbonate. All corners and edges are rounded so that no damage to the vehicle's surface (interior) can occur. A holding cord (undyed, cotton) with length adjustment is integrated into the frame, for safe attachment. The frame also incorporates a miniaturised electronic unit.
- The charge system is voltage limited to 14.2 volt (+/-0.2 volt) and temperature compensated in accordance with the charge characteristics of lead accumulators.
- The rated charge current per solar battery changer during full solar irradiation (Central Europe) is 255mA. The age-related loss of performance within the first six months, common to all solar battery chargers, amounts to a maximum of 15%.
- The solar battery charger and the electronics are short-circuit and reverse current protected.
- It is designed to operate continuously at ambient temperatures between -40°C and +90°C.
- The charge plug is designed as an OBD2 plug. Alternatively, an adapter cable (3m long) with a DIN connector for the charge plug and two battery charge clips (small) on the other end is available for direct connection to the battery poles.
- The connection cable (approx. 1.5m lon, from frame to plug) is made of wear and tear-resistent material and both break-proof and emission-free at temperatures between -40°C and +90°C.
- Optionally, an additional solar battery charger (without electronic unit) is available to boost the charging performance. This consists of a connection cable of 0.7m length and a 3.5/1.5 barrel connector. A maximum of two of these additional solar battery chargers can be connected to the two inputs of the ESM4.

DC/DC Converter
for Vehicles and Extended Environmental Requirements

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

DVCH - Direct current HV converter (electrically isolated)

Type	Input nom. VDC	Output Voltage	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)*1	14*	450W	162(135)x150(149)x73mm	o.r.

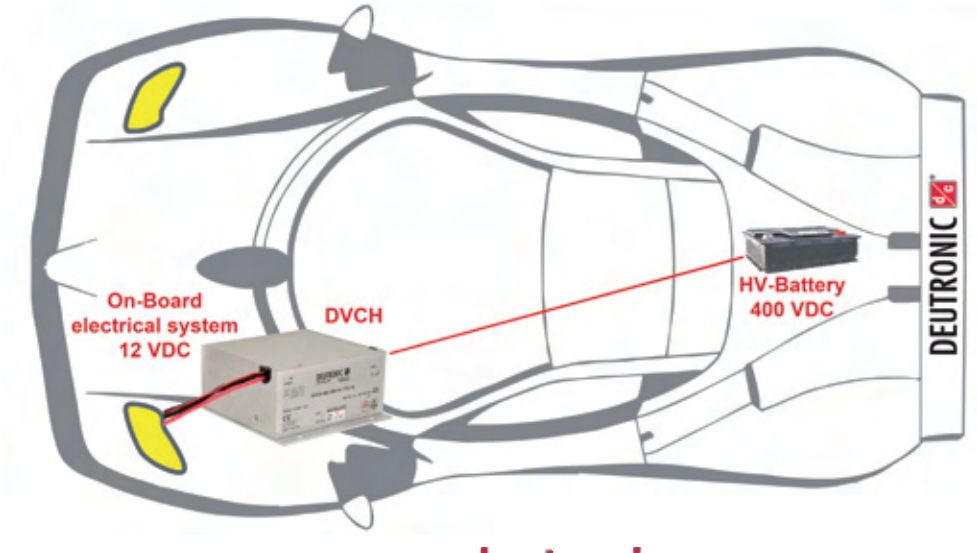
* further possible versions: 28 VDC
*1 higher input voltage etc.

Characterisics

- For hybrid and electrical vehicles
- No power on current surge
- Efficiency 93%
- DC wide range input
- Galvanic separation 1,5kV
- Short circuit and no load test
- Overvoltage protected
- Robust construction - potted device

Options

- Order option: E1 certification
- Order option: Inhibit Function
- Order option: Special output voltage e.g. 13,5/13,8/14,2
- Order option: Customer spec. DesignIN



www.deutronic.com

Lithium - Ion - Systems

DBL800-58-M-Li

- **Parallel connectivity up to 50kW quick charging units**

DBL5500/3W-Li-450

Type	Input nom. VDC	Output Voltage	Output Current	Power	Dimensions Standard Version	Item No.
					WxDxH	
DBL800-58-M-LI	100-240	max.58	11A (max.15A)	800W	360x321x141mm	107087/0/000
DBL5500/3W-Li-450	3AC 400V	max.450	max. 30A	5500W	443x495x131mm	o.r.

Features

- 100% Protection of on board electronic system/airbag
- Battery charger and adjustable power supply
- Extensive protection functions and self-protection functions
- Protection against defective batteries
- Reliable sparking suppression
- Comfortable menu navigation / charging parameter configurable
- Built-in communication interface

DBLM800Li

High charging performance and charging current in a compact housing

- **1200W peak performance**
- **800W steady state charging power (order option: 1200W steady state power)**
- **450W charging power via a 12VDC input (order option)**
- **30A max. charging current (up to 10 cells) or 20A (up to 12/14 cells)**

DBLM800Li with active Balancer

Type	Input Voltage	Output Voltage	Output Current	Power	Dimensions Standard Version	Item No.
					WxDxH	
DBLM800Li	100-240	max.58	max. 30A (10 cells)	800W	360x321x141mm	107205
			max. 20A (12/14 cells)			

Technical Data

- Automatic power reduction with higher temperatures
  (during operation, the current limiter of the charger is automatically matched to the operating conditions ,dependant on the mains voltage, operating temperature, load characteristic, etc.)
- 100-240VAC wide-range input for international operation (innovative D-IPS® technology enables an extremely extended input tolerance range - 60-300VAC for short periods), operation e.g. on emergency power generators is possible (aggregates with or without inverter technology)
- 12VDC input to connect to vehicle starter batteries (order option)
- Robust construction, sealed housing (order option: IP65 protection)
- Large graphic display, easy to use menu navigation
- Communication interface: USB host, 10MBit/s Ethernet
  (for configuration/remote interrogation using integrated webserver),
  optional update capability

Performances of the lithium ion charger program

- Suitable for standard lithium ion accumulators, as well as for LiPo batteries – amongst others LiCoO2, LiNiO2, LiMn2O4, LiCoxNiyMnzO2 or LiFePO4
- Charging of up to 14 serially connected Li cells
- Automatic cell-count identification
- Defective or deep-discharged cells are identified
- Charging process dynamically monitored
- Simple operation
- Up to 10 individual battery-pack configurations can be stored
- Individual configurable charging parameters enable universal operation of the charger for different customer specific Li accumulators (amongst others the following parameters can be individually adjusted: nominal capacity of the cells, pre-charging voltage/current/time, charging voltage, current limit, max. charging time, etc.)

Software

- Future-proof due to software updates
- Customer specific settings and firmware (order option)

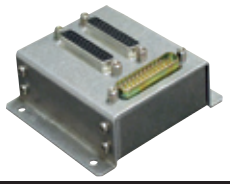
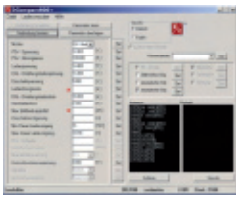
Balancer unit

- Simultaneous balancing from up to 14 cells
- Active balancer/active energy management: Almost no energy is wasted, rather the cells with the least charge are supplied by the cells with the most charge
- Extremely shortened charging times due to high balancing compensation currents (max. 1A/cell; total power ca.16W
- Extensive protection functions: each channel is protected against over voltage, overload, over-current and reverse-polarity up to 60V
- Potentially isolated individual cell outputs (galvanically isolated): no special cell sequence or order is required when connecting the individual cells to balancer (this is an importance safety feature, because with other similar solutions, an incorrect pole assignment results in damage to the balancer electronics)
- Integrated cell-management with individual cell measurement (internal resistance measurement) – optionally, values for further balancing can be made available
- Order option: without external energy supply from the mains the balancer can also supply itself from the accumulator energy

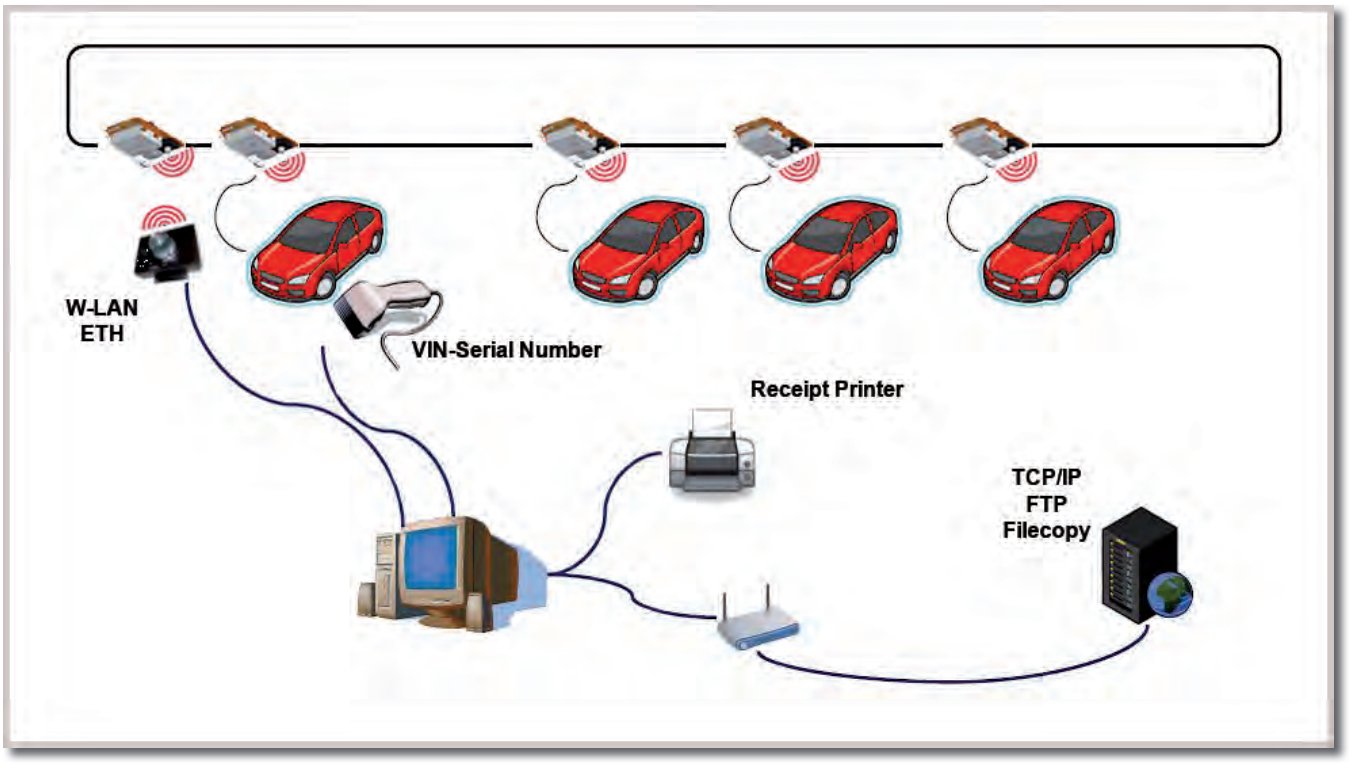
Accessories

Figure	Information	Applicable Types	Item No.
	**Charging cable**, 16mm², 200A High flexible cable with cable connector and charger clips 3,0m 5,0m	all types	140707 140708
	**Mains cable** with moulded connector and coupler receptacle acc. to IEC320 1,5m 3,0m 5,0m	all types	140503 140502 140501
	**Mains cable** (spirally) 5,0m	all types	140725
	**Charging cable set** to charge in parallel operation 5,0m	DBL1700/3W DBL2300/3W	140722
	**Cable-Reel System** Length of charging cable 5m 1,5m assembled feed line about (fixed cable, not rolled) Cross-section of charging cables 16mm² Maximum current 45A	DBL800	140734
	**Wallmount** for static fastening	DBL430 DBL800 DBL1000 DBL1200	140551
	**Transport system type 1** for 1 battery charger Option: Cable reel 25m External signal lamp (DBL-SIG-LR)	DBL430 DBL800 DBL1000 DBL1200	140526
	**Transport system type 2** for 2 battery chargers Option: Cable reel 25m External signal lamp (DBL-SIG-LR)	DBL800-B DBL1050-B DBL1200-B DBL1600-B	o.r.
	**Transport system** for max. 4 battery chargers	all types	140715

Accessories

Figure	Information	Applicable Types	Item No.
	**DBL-SIG-LR external signal lamp**, incl. 2m cable for indication of the chargers status	DBL800 DBL1200 DBL1600 DBL2700 DIPL430	107499 107498
	**D-ADAPT-SBB 2x25** Interface T-adapter in version 3 x 25-pole (1x male, 2x female) to connect external signal lamp DBL-SIG-LR	DBL800 DBL1200 DBL1600 DBL2700	140334
	**D-TOOL Parameter Edit MPC4,** Without cable (single desktop license for Windows® operating system) **D-TOOL Parameter Edit MPC2**, Without cable (single desktop license for Windows® operating system) **D-TOOL Parameter Edit MPC2**, With data cable 9/15-pole (single desktop license for Windows® operating system)	DBL800 DBL1200 DBL1600 DBL2700 DPBL425A/B/C DBL430 DBL/DPBL1000 DBL1700/3W DBL2300/3W DPBL425A/B/C DBL430 DBL/DPBL1000	140787 140788 140786
	**D-Mount-Bracket** Two brackets incl. screws for DBL300, DBL700	DBL300 DBL700 DBLW1200	140066
	**D-ADAPT-WLAN (Enterprise)** Enables the DBL battery charger series with MPC4 controller board to be connected to a Wireless LAN network (IEEE 802.11b/802.11g) for data transmission with max. 54 mbps.	DBL800 DBL1200 DBL1600 DBL2700 DBL3000 DBL5500	140342 140343
	**D-ADAPT-ETH (Ethernet)** Enables the DBL battery charger series with MPC4 controller board to be connected to an Ethernet net-work	DBL800 DBL1200 DBL1600 DBL2700 DBL3000 DBL5500	140341

More accessories and spare parts see
www.deutronic.com/battery-chargers/accessories



Logging of charge data

The logging of data is a supplement to our battery chargers, for the recording and evaluation of the charge data. Such a system can be realised for all battery chargers, irrespective of whether they are mobile, stationary or in a production line.

During data logging, the control unit (PDI) transmits the following data from the battery charger to a PC via infrared, W-LAN or Ethernet:

- VIN (vehicle identification number)
- Number of the battery charger unit
- Initial charge current and voltage
- Final charge current
- Charging time
- Test: OK or NOK, criteria in accordance with plant requirements

Furthermore, the PDI can communicate bi-directionally. As a result, new charge parameters can, for example, be centrally transmitted to all battery chargers.

Battery Rework station

The use of battery chargers in automotive industry workplaces, e.g. in rework or test stations, ensures that the vehicle battery does not lose any power through test or reworking processes. Furthermore, battery chargers enable a recharging of the vehicle battery during stops at workplaces.

Depending on customer requirements and local conditions, the battery chargers can be installed mobile, stationary or displaceable.

References

References

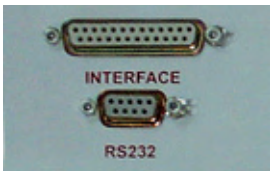
- Aston Martin
- Audi
- Bentley
- BMW Group
- Bugatti
- Daimler
- Ferrari
- Fiat
- Jaguar
- KIA
- Karmann
- Lamborghini
- Land Rover
- MAN
- Magna Steyr
- Maybach
- McLaren
- Opel
- Peugeot
- Porsche
- Renault
- Rolls Royce
- Seat
- Skoda
- Volkswagen

Advantages of the Deutronic Charging Systems

- **100% On-Board compatibily -** especially coordinated to on bord requirements
- **Universal -** suitable for lead-/gel-/AGM-/VRLA- batteries
- **Reliable -** simple and automatic operation in workshops and vehicle production lines
- **Function optimized -** operation as battery charger and external power supply
- **Flexible -** charging/recharging of 12V vehicle starter batteries without disconnecting from on bord installation
- **Powerful -** reliable supply in buffering during diagnosis, programming (flashing) and battery change
- **User-friendly -** AUTOMODE enables an easy setting mode with a rapid battery test
- **Functionality -** reverse polarity/short circuit/overload protection, user selectable shorted cell detection, charging of partial sulfated batteries etc.
- **Robust construction -** planed and constructed for harsh industrial operation
- **Simple operation -** comfortable menu handling in German, English, Spanish, Italian, French (manual additional in Japanese, Russian, Chinese)
- **Customer-friendly -** customer specific operation parameters and firmware ex works on request
- **International presence -** worldwide network of Deutronic service centres

Interfaces

Communication interface for integration of the charger into consisting or planned factory networks (potential free relay, RS232, ETH, W-LAN etc.).



Display

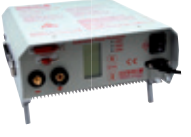
Big graphic display for considerably improved visualization and self-explaining menu navigation.

Handling

Optimized, easy handling.
Menue navigation in language
German, English, Spain - others
on request.

Housing designs

- Standard-Design: 340x295x146,5mm



- B-Design: 355x385x143mm

- M-Design, portable for mobile use:
  (Option M-IP: waterproof)
  360x321x141mm

- W-Design
  for workshop use

- OEM-Design

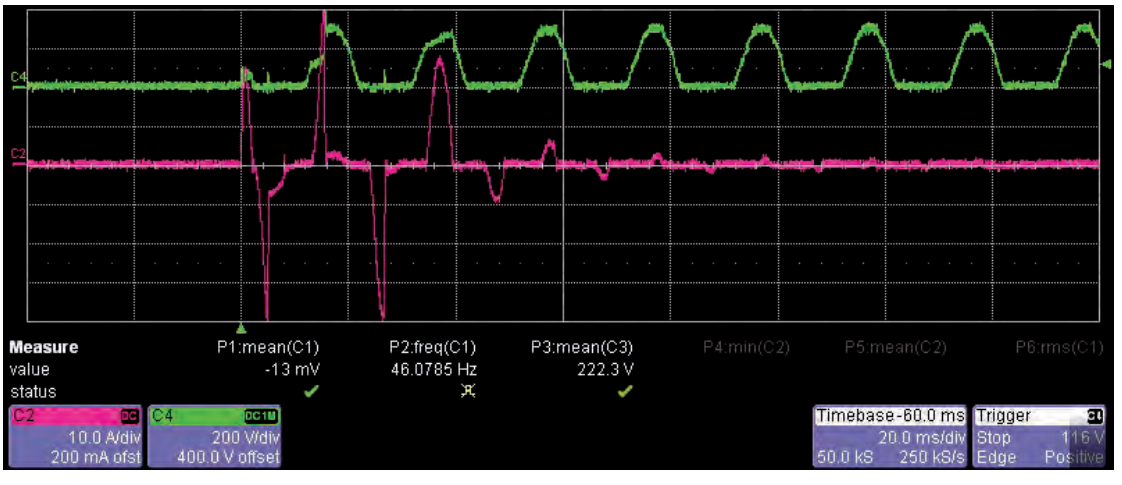
D-IPS® Technology

The Deutronic Intelligent Power System (D-IPS®) with it's intelligent digital-controlled concept (DSP) enables hitherto unknown functions for power supply inputs such as e.g.:

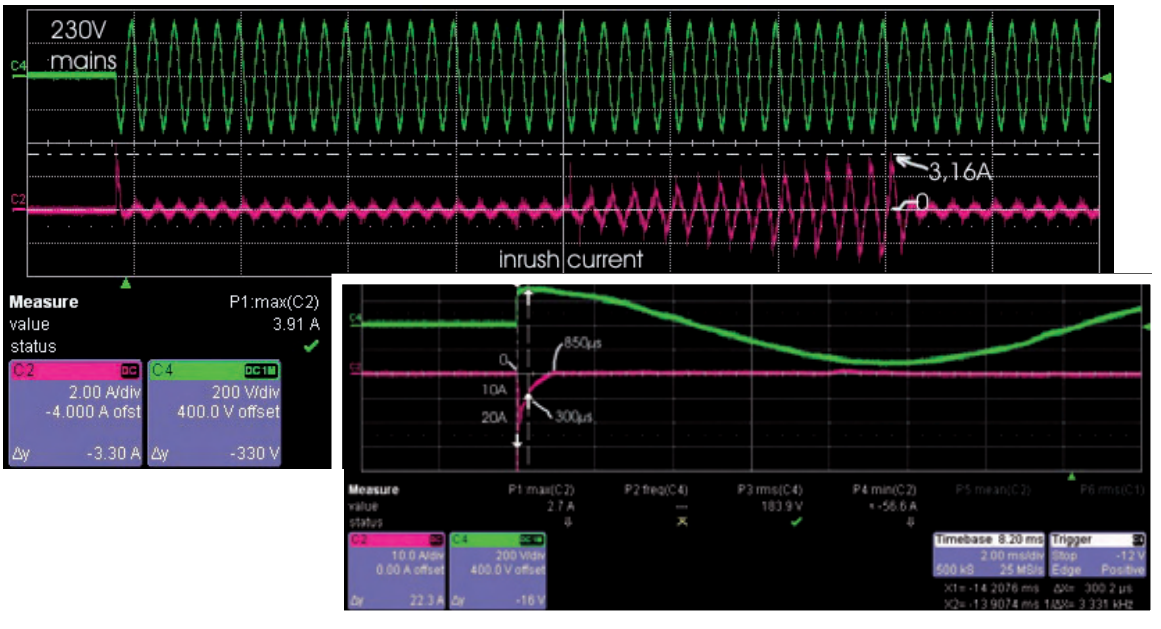
- Full control of the start-up behaviour
  a) Characteristic edge/ramp or a defined inrush current magnitude
  b) no inrush current surge- elaborate protection using expensive circuit breakers and motor protection switch is is no longer required
- Time delayed switching of the power supply (advantageous when other equipment in the same supply lines cause high inrush currents
- High transient immunity against over-voltage or voltage dip
- OPTIONAL: Network analysis and the associated control of the network input consumption
- Wide range input:
  1AC: 100-240VAC (tolerance: 85-276VAC, for short periods <1sek. 60-300VAC, 100-350VDC)
  input with active PFC, no inrush current surge
  3AC: 400-480VAC (tolerance: 320-552VAC, 400-780VDC) >> operation after the permanent loss of one
- High efficiency
- Low Standby-Power

The following describes the INRUSH CURRENT SURGE of a conventional power supply compared with the switch-on behaviour of a power supply with Deutronic D-IPS® technology ...

INRUSH CURRENT SURGE of a conventional power supply ...

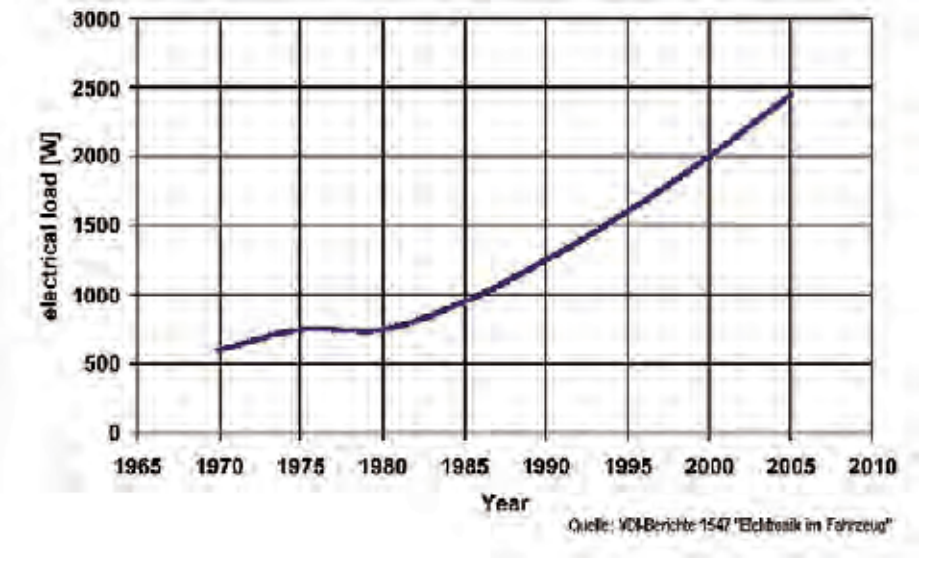


Controlled switch-on behaviour of the 1AC D-IPS® technology ...



Example application

Due to the ever increasing requirements in vehicles and their onboard electronics, the necessary performance is also rising. This is clarified in the following illustration: surge in growth of the required performance in vehicles.



The new Beetle runs and runs, but it requires a lot of power for the onboard network: up to 2050 Watt is absorbed by the electrical consumers in the 12 (14) volt network – the 6 (7) volt network of the Beetle in the 60s required barely even 136 Watt (in brackets the necessary charging voltage).
*But also the current requirements of the middle and upper class models is exploded: from today's 1500 Watt continual power upto 300 to 7000 Watt in "virtual" vehicles. To achieve 100 Watt of additional electrical power, 0,17 Litre fuel per 100 kilometre must however be consumed. (**Source**: Elektronik im Kraftfahrzeug. Duesseldorf: VDI, 2000. 1225 pages – VDI report 1547)*

Exactly resulting from this issue, automobile manufacturers are often faced with a problem: "How to achieve an appropriate dimensioning of the supply to safeguard the existing periphery?"

The periphery of individual conveyor systems consists e.g. of electric drives, PLC controller, charging technology, etc.. on the network side there are individual overhead conveyors as well as conveyor sections arranged in the form of a cascade (series connection).

Consequently:
=> higher inrush current
=> greater expenditure for suitably safeguarding of the power supply
* if the dimensioning is incorrect the complete conveyor section can stop
* in the event of a fault, safety measures must however operate effectively

Conclusion:
Using Deutronic D-IPS® technology it is possible to adapt the complete production line with its increased power requirement using the existing periphery (cabling, electric motors, chargers, etc.) and continue to use it!

>>D-IPS® - brings your inrush current problem under control<<

We bundle our know-how and our strengths for you

Deutronic Testsystem

Application and project consulting from our development departments.

Components

Development
Project Management
Software (Vites)
System manufacture
Power-supply
Know-how
Training, maintenance
Measurement / bus connections

Cabinet manufacture
Construction
Transformers
Controllers
Know-how
Automat Manufacturing

Bus systems
Development
Industrial networks
Control technology
Visualisation
Software

Mech. construction
Transport Systems
Conveyor systems
Installation partner
Service partner

System components
Service

Corporate group

DEUTRONIC elektronik gmbh
Power-Supplies-Electronics ▪ Test- and Measurement Systems ▪ EMC-Lab

SEDLBAUER AG
Electromechanics ▪ Device Engineering ▪ Electronics ▪ Telecommunications
EDWANZ group

b-plus GmbH
Automotive ▪ Automation ▪ Embedded System Solutions
EDWANZ group

Sedlbauer EKS GmbH
Sedlbauer ▪ Entwicklung ▪ Konstruktion ▪ Service ▪ GmbH
EDWANZ group

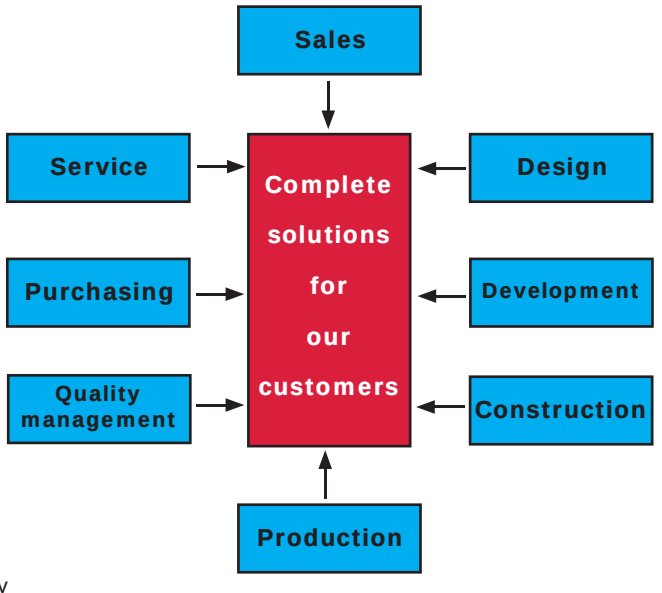
Projectpartners worldwide

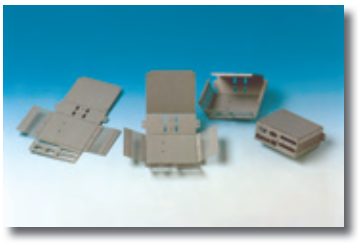
SEDLBAUER AG
Electromechanics ▪ Device Engineering ▪ Electronics ▪ Telecommunications
EDWANZ group

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

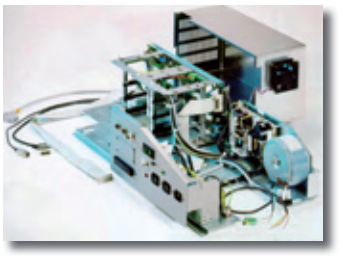




Mechanical modules
and spare parts (serial production)

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 GmbH
Automotive ■ Automation ■ Embedded System Solutions
EDWANZ group

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

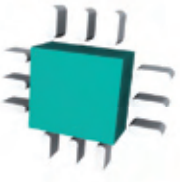
automation

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

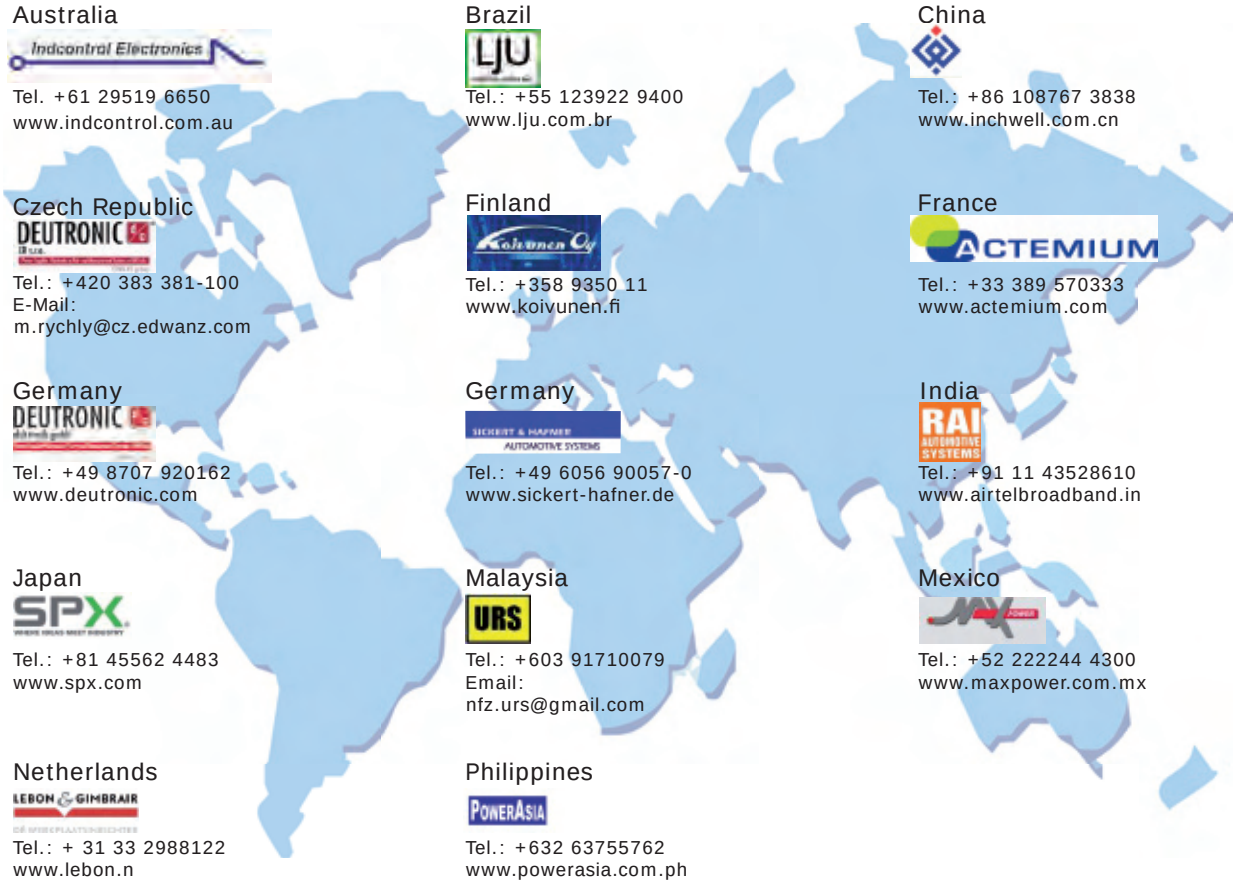
Windows® Embedded Partner

ifm system integrator

kontron Certified Design Partner

CiA member

Worldwide Service and Distribution
Charging Technology



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Advanced Technologies EDWANZ group