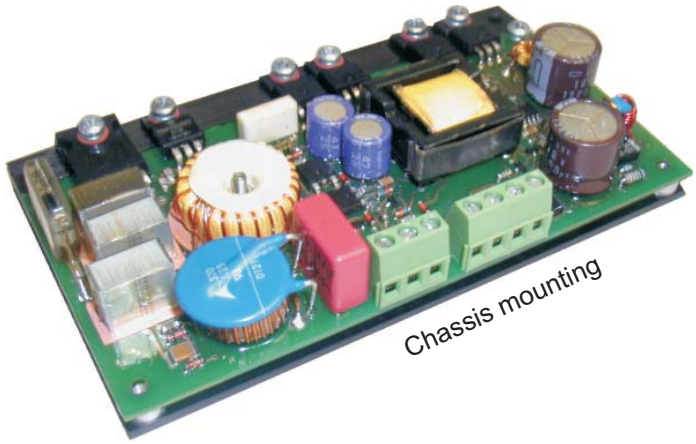
- **Input voltage range > 3:1**
- **Open build-up / chassis mounting**
- **Heat sink with flange**
- **Over voltage protection (Logic)**
- **Input filter C-L²-C**
- **Output current limiting**
- **Dyn. and stat. power limited**
- **noise suppression EN 55022.B**
- **Disturbance proof Burst / Surge level 3**

For Railway / Roadcar / Telecom /Industry



Series BNL·U/B/T

General:

Outputs:

- Accuracy absolute ± 1%
- Regulation factor $\Sigma(U_{in}+I_{out}+T_U) < \pm 1{,}5\%$
- Ripple < $20mV_{pp}$(const. over T_U)
- Spikes < 50 mV_{pp} (T 1:1/50MHz)
- Response time ΔI=50% ≤ 150 µs
- No-load-, over-load-, short circuit proof
- No intercircuit interference
- Current limiting:
  BNL·U/B: both outputs: 1,1 I_{outmax}
  BNL·T: Main output: 1,1 I_{outmax}
  additional outputs: 1,5 I_{outmax}
  BNL·U with sense lines (Σ2%UA)

Input:

- No-load power approx. 1,5 W
- ON-OFF-application (E·A) < 2 mA IE
- Reverse polarity diode (square, fuse)
- Input filter in acc. to EN 55022.B
- Disturbance proof
  EN 61000-4-4 (Burst) Level 3
  EN 61000-4-5 (Surge) Level 3
- Low Input capacity
  < 40 µF(24V) / < 10 µF(110V)

General:

- Coupling capacity:
  Input - Output ~180 pF
  Input - PE ~1 nF
  Output - PE ~150 pF
- 9-pol. plug / screw clamps
- Isolation test voltage 1,5 KV_{AC} 1 Min,
- Ambient temperature -25°C / +70°C,
  Option: -40°C / +85°C
- Derating 1% / °C >70°C
- Converter temperature <95°C (✱-point)
- Cooling with distant bolts for screw-mounting
- MTBF > 300000 h (G_F 40°C)
- Shock/vibration in acc. to EN 50155
- Weight approx. 250 g
- Dimensions:
  BNL.U/B: 135 x 76 x 25 mm³
  BNL.T: 145 x 76 x 25 mm³

Uin V	Uout1·Uout2 V	Iout1·Iout2 A	Model- number
8 - 38	5,1	7	BNL·U 20·05·70
	12	3,3	BNL·U 20·12·33
	24	1,7	BNL·U 20·24·17
	5,1·12	4,0·1,0	BNL·B 20·05·12·40·10
	5,1·24	4,0·0,8	BNL·B 20·05·24·40·08
	12·12	2,5·1,0	BNL·B 20·12·12·25·10
	15·15	2,0·1,0	BNL·B 20·15·15·20·10
	5,1·±12	4,0·±0,5	BNL·T 20·05·12·40·05
	5,1·±15	4,0·±0,5	BNL·T 20·05·15·40·05
14,4 - 34	5,1	7	BNL·U 24·05·70
surge proof	12	3,3	BNL·U 24·12·33
SG 3 / 2 Ohm	24	1,7	BNL·U 24·24·17
	5,1·12	4,0·1,0	BNL·B 24·05·12·40·10
	5,1·24	4,0·0,8	BNL·B 24·05·24·40·08
	12·12	2,5·1,0	BNL·B 24·12·12·25·10
	15·15	2,0·1,0	BNL·B 24·15·15·20·10
40 Watt	5,1·±12	4,0·±0,5	BNL·T 24·05·12·40·05
	5,1·±15	4,0·±0,5	BNL·T 24·05·15·40·05
19 - 76	5,1	8	BNL·U 50·05·80
85V dyn	12	3,7	BNL·U 50·12·37
	24	1,8	BNL·U 50·24·18
	5,1·12	4,0·1,0	BNL·B 50·05·12·40·10
	5,1·24	4,0·0,8	BNL·B 50·05·24·40·08
	12·12	3,0·1,0	BNL·B 50·12·12·30·10
	15·15	2,5·1,0	BNL·B 50·15·15·25·10
45 Watt	5,1·±12	4,0·±0,5	BNL·T 50·05·12·40·05
	5,1·±15	4,0·±0,5	BNL·T 50·05·15·40·05
45 - 158	5,1	8	BNL·U 10·05·80
surge proof	12	3,7	BNL·U 10·12·37
SG 3 / 2 Ohm	24	1,8	BNL·U 10·24·18
	5,1·12	4,0·1,0	BNL·B 10·05·12·40·10
	5,1·24	4,0·0,8	BNL·B 10·05·24·40·08
	12·12	3,0·1,0	BNL·B 10·12·12·30·10
	15·15	2,5·1,0	BNL·B 10·15·15·25·10
	15·15	1,5·1,5	BNL·B 10·15·15·15·15
45 Watt	5,1·±12	4,0·±0,5	BNL·T 10·05·12·40·05
	5,1·±15	4,0·±0,5	BNL·T 10·05·15·40·05
14,4 - 154	30 Watt	BNL.U/B/T 03.XX.XX	On request
(H)	-40°C up to +85°C		Additional charge
Modification costs for possible changes above values			On request

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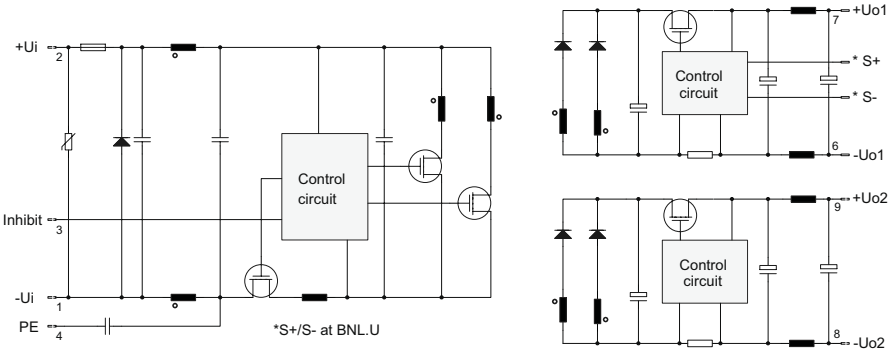
DC/DC-converters of the series ***BNL. U/B/T*** are specially designed for the use in industrial and mobile applications (chassis mounting). All power components are isolated mounted on a flange heat sink which realizes the direct heat conduction to the chassis.

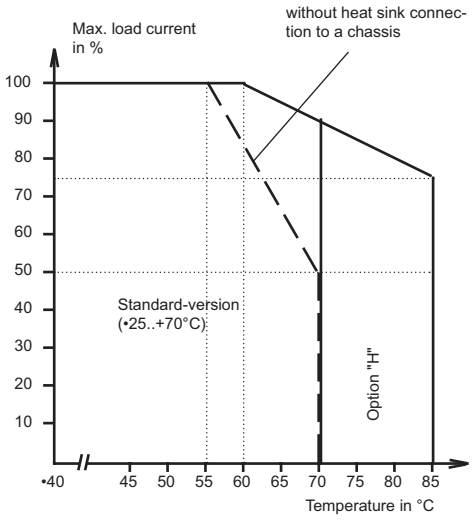
Through this the resulted low capacitive ground coupling and the transformer's low coupling capacity lead to a power supply which is insensitive against symmetrical und unsymmetrical transients.

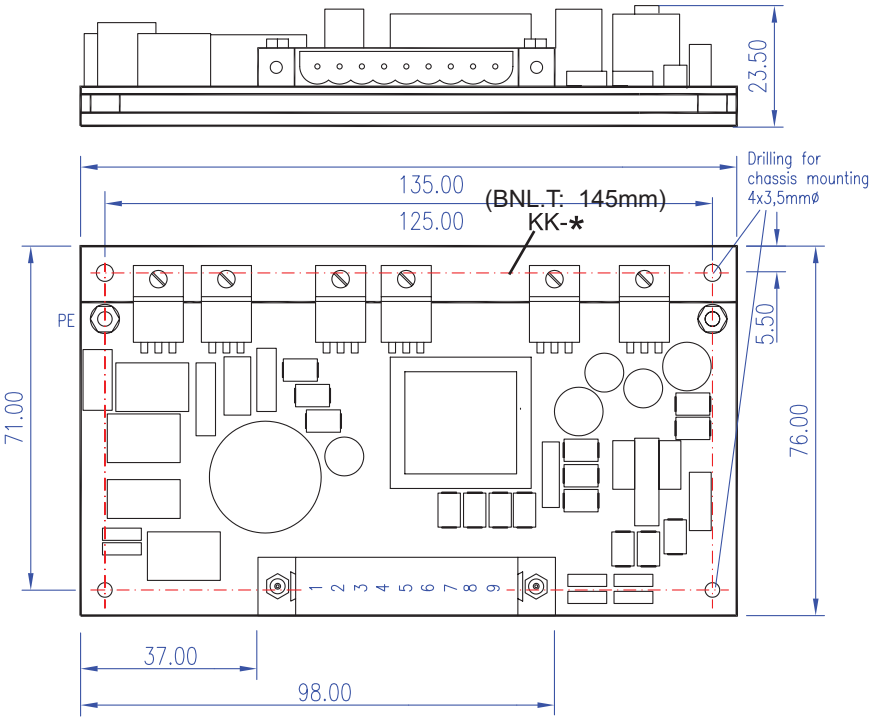


A power density of more than 160 W / dm³ was achieved. The converter can run unproblematic in Extreme temperature ranges up to 100°C at the measuring point (*) with sufficient cooling.

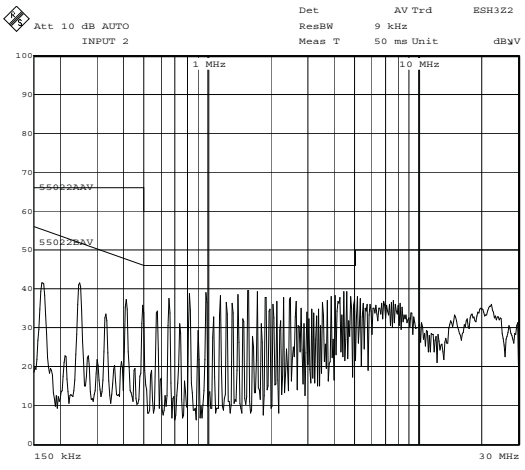
The very wide input voltage range, the component's low load limit, the reliable functionality as well as the renunciation of wet-electrolytical capacitors in the chopper circuit (input) opens a wide application range in the fields of automotive-, industrial- and special technology.

Derating-curve





Measurement of radio interference
(without external circuit)



Plug A (lying)

Flat plug Weidmüller 151.106
Flange SLBB 1R 0R SET

Plug B (standing)
On request

On request: plugs for higher requirements in gold plated version

Pin-assignment

	BNL.U	BNL.B	BNL.T
1	-Ui	-Ui	-Ui
2	+Ui	+Ui	+Ui
3	Inhibit	Inhibit	Inhibit
4	NC	NC	NC
5	NC	NC	NC
6	-Uo	MUo1	-Uo1
7	+Uo	PUo1	+Uo1
8	-S	-Uo2	-Uo2
9	+S	+Uo2	+Uo2
10			-Uo3
11			+Uo3

Application

Pre-filter, AFI (Active transient protection)
Inrush current limiting, hold-up time
On request