- **Euro card 3 U / 14 TE**
- **DIN rail mounting (option)**
- **Wide input voltage range**
- **Inrush current limitation (ICL)**
  Active transient protection filter
  (SYKO-Patent no. 3804074 and 0402367)
- **Input noise suppression EN 55022.B**
- **Input / output spike filter**
- **Shock/vibration EN 50155**
- **Active hold-up time 10ms**
  optional with SPK01

for
- Railway
- Vehicles
- Instrumentation

Series HL30.U

Main points:

Output:

- Regulation Σ (U_{in}+I_{out}+T_U)<±2%
- Accuracy absolute ± 1%
- Ripple <20 mV_{pp} (over T_U)
- Spikes <200 mV_{pp} (T 1:1/50MHz)
- Response time ΔI=50% < 2 ms
- Constant current limitation < 1,2 $I_{o\ max}$
- Output spike filter (C - L^2 - C)
- No-load, over load, short circuit proof

Input:

- Burst/Surge EN61000-4-4/5 level 3 2Ω
- Stand-by power < 5 Watt
- ON-OFF-application (inhibit)
- On-Off switch hysteresis at under voltage and delayed restart
- Input filter acc. to EN 55022.B
- Low input capacity
- Dyn. rev. polarity protection (square diode)
- Inrush current limitation (active)
- Emergency fuse on PCB

In general:

- Connector DIN 41612, style H15
  1TE displaced
- LED for Uin/Uout = OK.
- Buck regulator + push-pull topology
- Clock frequency 60 kHz/80kHz
- Isolation test voltage 1,5 KV_{AC} 1 min
- Ambient temperature -25°C / +70°C
- Option: -40°C / +85°C EN50155 TX
- Derating 1,2%/°C > 60°C
- MTBF on request
- Shock/vibration acc. to EN50155
- Weight 600g 19"-Einschub
- CE-conformity on request
- With pre-switched storage unit SPK01:
  10ms bridging acc. to EN50155
  of >10ms from 1,1Ui_{min} without
  interruption (application)
- Limit temperature on KK-* 95°C
- Front panel acc. to specification (Option)

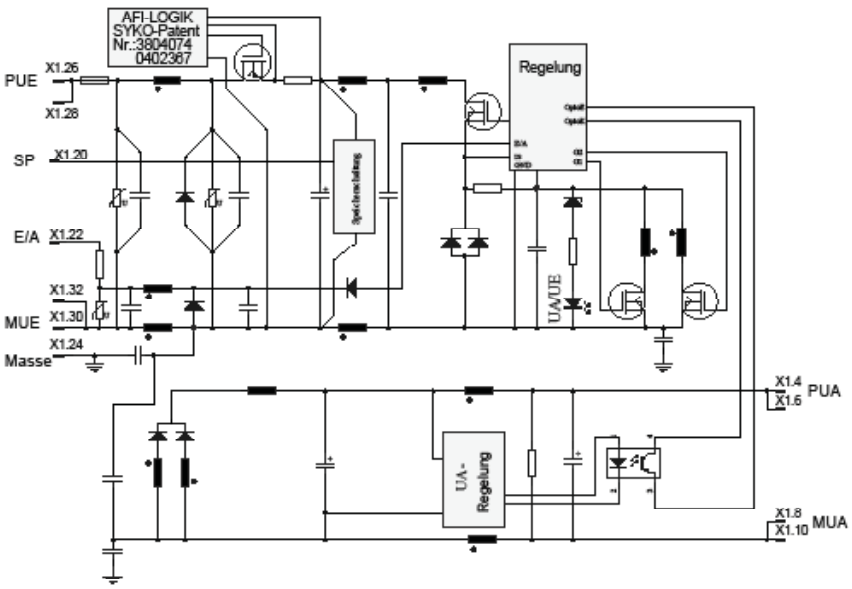
Uin	Pout	Uout	Iout	Eff.	Model
V	W	V	A	%	number
14,4 - 34	**180**	12	15	88	HL30·U24·12·150
surge proof		15	12	88	HL30·U24·15·120
1kV / 2Ω		24	7,5	89	HL30·U24·24·075
1,8kV / 5Ω		48	3,8	89	HL30·U24·48·038
		110	1,6	88	HL30·U24·110·16
21 - 51	**200**	12	16	89	HL30·U36·12·160
surge proof		15	13	89	HL30·U36·15·130
1kV / 2Ω		24	8,3	89	HL30·U36·24·083
1,8kV / 5Ω		110	1,8	on request	HL30·U36·110·18
36 - 76	**220**	12	16	90	HL30·U60·12·160
surge proof		15	14	90	HL30·U60·15·140
1kV / 2Ω		24	9,2	90	HL30·U60·24·092
1,8kV / 5Ω		48	4,6	84	HL30·U60·48·046
42 - 154	**200**	12	15	88	HL30·U80·12·150
surge proof		15	12	88	HL30·U80·15·120
1kV / 2Ω		24	8,3	88	HL30·U80·24·083
1,8kV / 5Ω					
66 - 154	**300**	12	20,0	89	HL30·U10·12·200
surge proof		15	20,0	89	HL30·U10·15·200
1kV / 2Ω		24	12,5	90	HL30·U10·24·125
1,8kV / 5Ω		48	6,3	90	HL30·U10·48·063

Version H	-40°C up to +85°C	additional charge
HL30.XX.XX.XXX	19"-cassette or open chassis mounting	
HL30.XX.XX.XXX.C	Chassis mounting with housing	additional charge
HL30.XX.XX.XXX.S	DIN rail mounting with housing	additional charge
Modification costs of possible changes above values:		on request

The ***HL30.U*** series with an output power up to 300W is developed for mobile applications and high operational reliability.

Inrush currents are limited and long term transients are absorbed with the used SYKO-Patent of an active filter. The converter works with low input capacity and the chopping capacitors are chosen as high current capable foil capacitors.

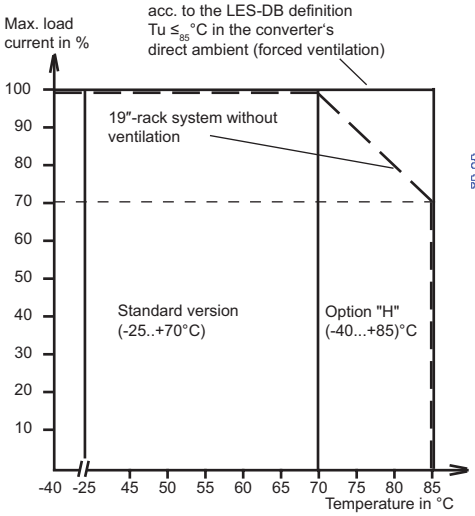
The clever mechanical build up allows the heat conduction to the heat sink. The double rail (PCB + heat sink) allows high shock/vibration applications. The converter is equipped with an under voltage monitoring function with amplitude- and time hysteresis. The integral switch on current limitation is done with an internal power limitation.



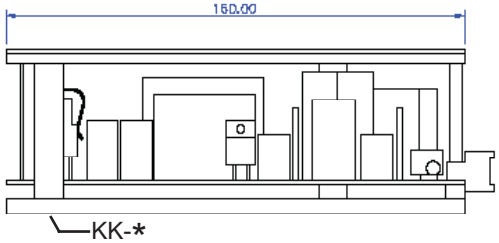
The functionality is secured in the whole operational range up to limit values based on the chosen components, filters, security circuits, dynamical and statically current limitation and over voltage protection.

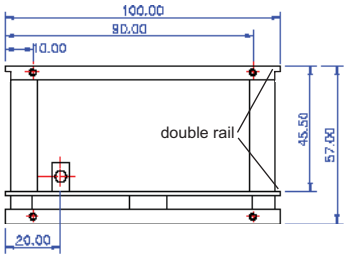
For output voltages higher than 12V and an amplitude stability of ±2,5% = f(Uin/ Iout/TU) the control loop's feed back with optical couplers is not necessary. This results a limited parallel operation and redundancy.

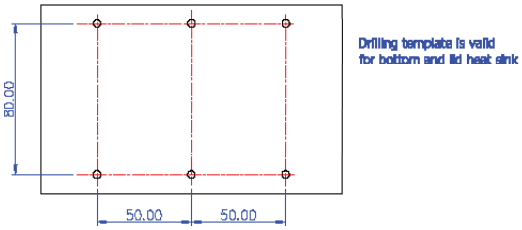
Derating curve



19"-cassette-Variante



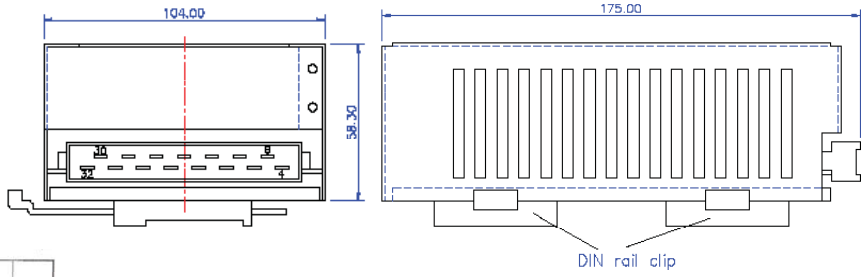




Pin assignment

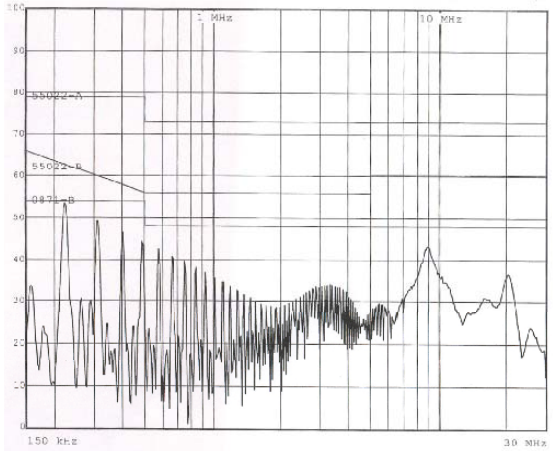
+Ui	26 / 28
-Ui	30 / 32
+Uo	4 / 6
-Uo	8 / 10
Ground	24
inhibit	22
SP	20

DIN rail version



Measurement of radio interference

without external circuits



Application

external circuit
with storage unit SPK01