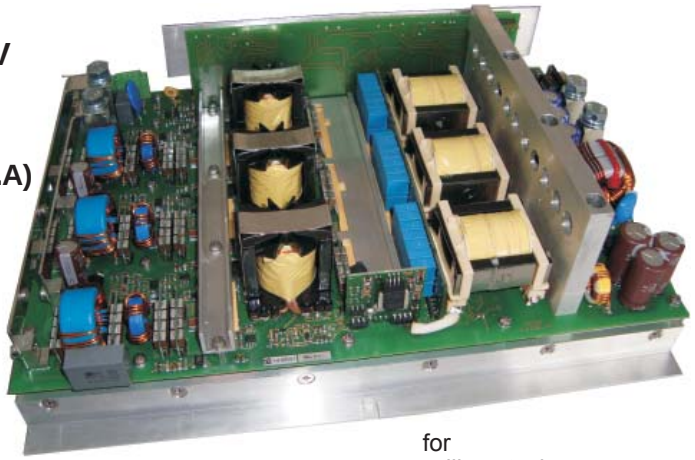
- **Temperature regulated charging PT 1000**
- **From low voltage tolow voltage 24V - 110V**
- **Charging of high current starter batteries**
- **4 mm air and creepage distances**
- **EMC/disturbances EN50121-3-2 (EN 55011.A)**
- **Shock/vibration EN 61373 Kat. 1, cl. B**
- **Fire protection DIN 5510 / EN 45545**
- **CAN interface floating**
- **Functional monitoring with controller**
- **Minimum power loss (option SR[3])**



series delivery includes cover

for
- rolling stock
- vehicle applications
- special applications

Series BLG.H3

Battery charger from low voltage

Main points:

Input:
- 24 / 36 / 72 / 110V battery
- EMC / disturbances EN50121-3-2
- Sleepmode <1mA
- no load power approx. 20W
- Inhibit 10 - 154V / 2mA = ON (open = OFF) floating-, no polarity, burst/surge proof
- Turn-on hysteresis 0,7/0,6 Unom time-delayed
- Fuse / circuit breaker customer sided
- Reverse connection protection [1] (reverse connection causes defect!)
- Integrale power run-up
- Connections:
  Power: X1/2: Würth screw terminal M8
  Sum-Inhibit: X3: Phoenix MC 1,5/4-GF-3,81

Output:
- Uout = f(TBat) with temp.-Sensor PT1000
- Option: Uout fixed voltage= Series FE.H3 [4]
- EMC / disturbances EN 50121-3-2
- no load-, over load, short circuit proof
- Tolerance ± 1,5% = f(Uin/Iout/Ta)
- Uout -7% at Uin = <0,7 x Unom [2]
- Regulation offset ΔI=40-90% <500mV / <3ms
- Basic load 4% Iout-nom (otherwise ripple approx.1% Uout)
- Failure-Signal (Relais X5)
- Connections:
  Power X7/9: Würth screw terminal M8
  Temp.Sensor X4: Phoenix MC 1,5/3-GF-3,81
  Power good X5: Phoenix MC 1,5/3-GF-3,81

in General:
- LEDs: Uin = OK / Power good
- CAN interface (Option) D-Sub (X6)
- Efficiency up to 94%
- air/creepage distances / isolation test voltage:
  Input - output: 4mm / 1,5 kVAC 1 min
  Input - ground: 3mm / 1,5 kVAC 1 min
  output - ground: 3mm / 1,5 kVAC 1 min
  Input/Output - signals: 3mm / 1,5 kVAC 1 min
- Ambient temperature Ta: -25/+60°C
  Option: -40/+85°C with forced cooling
  Derating without SR >60°C: 1,5%/°C
  with SR >70°C: 1,5%/°C
- MTBF on request
- Shock/vibration acc. EN61373, kat. 1, cl. B 50m/s²-30ms / 7,9m/s²rms all directions
- Weight: ca. 5 kg
- Dimension: (335 x 258 x 102)mm
- Ground connection: M5 thread bolt

2) for increase of efficiency

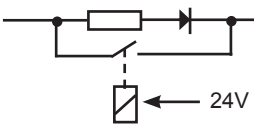
Input		Series FE.H3			Model number
Uin range	Uin nom	Uout 4)	Uout range	Iout stat./dyn.	
V DC	V DC	V DC	V DC	A	
18 - 32	**24**	24	24 - 30	30/38	BLG.H3.24.24.30/38
16,8 - 34 dyn.[2]		36	36 - 45	20/25	BLG.H3.24.36.20/25
		72	72 - 90	10/12,5	BLG.H3.24.72.10/12
		110	110 - 137	6,5/8,2	BLG.H3.24.10.06/08
25 - 47	**36**	24	24 - 30	30/38	BLG.H3.36.24.30/38
21,6 - 51 dyn.[2]		36	36 - 45	20/25	BLG.H3.36.36.20/25
		72	72 - 90	10/12,5	BLG.H3.36.72.10/12
		110	110 - 137	6,5/8,2	BLG.H3.36.10.06/08
50 - 94	**72**	24	24 - 30	33/42	BLG.H3.72.24.33/42
43 - 101 dyn.[2]		36	36 - 45	22/28	BLG.H3.72.36.22/28
		72	72 - 90	12/14	BLG.H3.72.72.12/14
		110	110 - 137	7,3/9,0	BLG.H3.72.10.07/09
77 - 143	**110**	24	24 - 30	33/42	BLG.H3.10.24.33/42
66 - 154 dyn.[2]		36	36 - 45	22/28	BLG.H3.10.36.22/28
		72	72 - 90	12/14	BLG.H3.10.72.12/14
		110	110 - 137	7,3/9,0	BLG.H3.10.10.07/09

2) Uo drops to 0,93 x Unom by reaching the dyn. minimum input voltage

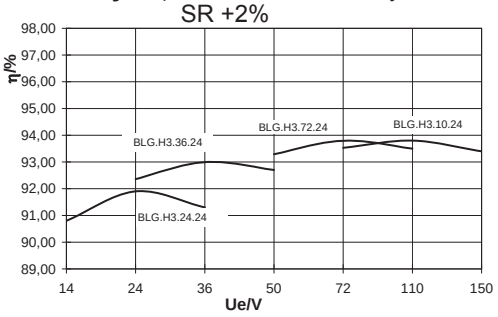
adaption of mecanical design:	on request
Single projecting costs:	on request
Modification costs of possible changes above values:	on request

2) Temperature regulated charging
The charging end-voltage characteristic curve [UA=f(TBat)] can be adapted as „three point curve“ in steepness by RS232 interface with an optional Software (temperature sensor is not part of delivery). Optionally the output can be modified to a fixed or analogue changeable level. Over temperature or broken wires at the temperature sensor sets the output level to the nominal value.

1) Option:
Softstart and protection of reverse connection
values on request

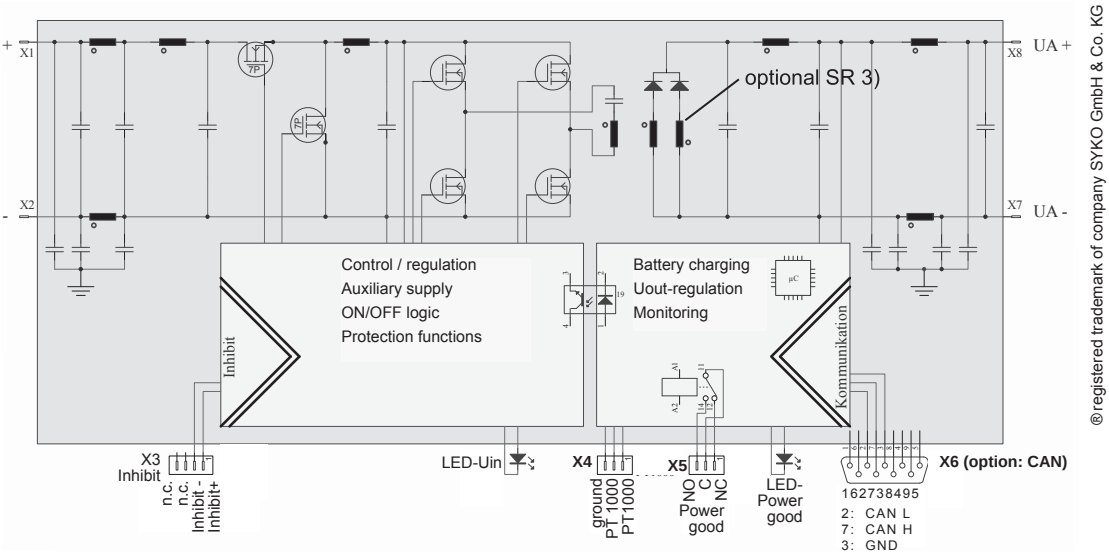


Efficiency 3) increase of efficiency SR +2%



SYKO Gesellschaft für Leistungselektronik mbH • Phone +49(0)6182/9352-0 • Fax +49(0)6182/9352-15 • www.syko.de • email: info@syko.de

The **BLG.H3** series is designed for intelligent, temperature regulated charging of low voltage batteries from low voltage sources such as batteries or DC intermediate circuits in railway, ship and vehicle applications. The chosen switching concept results very high and constant efficiencies over the input voltage range and can optionally be increased about 2% (>30% lower power loss) by the SR technology. Parallel operation of battery charging and on-board network supply is possible without decoupling diode.



The sleep mode reduces the input current (IN) to max. 1 mA allows the operation without series connected contactor. Peak/inrush currents are prevented with an optional reverse connection protection. LEDs will signal errors (Uin/power good) and power good is signaled with floating relay contact. Temperature regulated battery charging function is based on the internal controller and PT1000 sensor (X4). With the help of an internal auxiliary converter all functional levels are turned-on active with a controlled procedure. External / customer sided is necessary to improve the MTBF figure. The converter is capable to charge batteries from 0V with constant current. Optionally X5 can give out an error signal, when at active charging procedure the battery voltage is remaining ≥1min at <0,7Unom or ≥1sec at <33%. With an optional floating CAN interface the system corresponding can take place or it is possible to perform the first set-in-order process based on an optional software. The output is continuous and dynamical over-load and short circuit proof. The mechanical build up und thermal management as well as use of foil and ceramic capacitors (on separate PBC) make this converter series ideal for the use in mobile areas with high requirements.

Mechanics