- **High current low voltage output**
- **Low voltage battery input**
- **Shock/vibration EN 61373**
- **Parallel operation (Option)**
- **4 mm air and creepage distances**
- **Sleep mode current consumption <1mA**
- **controled, monitored fan operation**
- **Solid base plate heat sink**
  option: for breakthrough mounting

for mobile Applications
- rolling stock
- vehicles
- special technology

Serie FE.H6

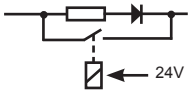
Main points:

Input:
- 24 / 36 / 72 / 110V-Battery ±40%
- EMC / Disturbances EN50121-3-2
- Defined turn-on point
  with amplitude / time hysteresis
- Fuse / auto circuit breaker customer sided
- Cross plugging protection
  with optional SYKO-Application 2)
- Integral power run-up
- No-load power approx. 20W
- Power sleep mode <1mA (Sum-Inhibit)
  floating / polarity independent / surge proof
  10 - 154V / 2mA = ON (open = OFF)
- No-load power consumption <20W
- Connection:
  Power IN: Würth screw clamps M8
  Sum-Inhibit X1: Phoenix MC 1,5/5-STF-3,81

Output:
- Uo fixed output level
- Tolerance ± 1,5% = f(Ui/Io/Ta)
- EMC / disturbances EN50121-3-2
- Option: Parallel connection Uout ±4%
- Auxiliary output 24V / 0,4A floating
  for external loads (X2)
- Uo -14% at Ui = <0,6 x Unom 1)
- Regulation offset ΔI=5-100% <1% Unom
- No load capable 100% load step
- No load and short circuit proof
- Error signal relay X3 floating (fans)
  Option:
  Relay X4 Uout<0,7Unom floating (short circuit)
- Auxiliary output 24V / 0,5A (X2)2)
  isolated to main output and input, no-load,
  short circuit proof, regulated
- Connections:
  Power OUT: Würth screw claps M8
  Aux. output X2: Phoenix MC 1,5/3-STF-3,81
  Error signal X3/X4: Phoenix MC 1,5/3-STF-3,81

In general:
- RS232 interface floating (X7)
- Efficiency >93% (25...10% load/Ui)
- Air/creepage distances / isolation test voltage:
  Input - output: 4mm / 1,5 kV_{AC} 1 min
  Input - ground: 3mm / 1,5 kV_{AC} 1 min
  output - ground: 4mm / 1,5 kV_{AC} 1 min
  Inp./outp. - Interface: 3mm / 1,5 kV_{AC} 1 min
- Ambient temperature Ta: -25/+70°C
  Option: -40/+85°C
- Derating >60°C: 1,5%/°C
- MTBF on request
- EMC acc. EN50121-3-2
- Shock/Vibration acc. EN61373, Kat. 1, cl. B
  50m/s²-30ms / 7,9m/s^2_{rms} for all directions
- Weight: approx. 11 kg
- Dimension: (380 x 510 x 108)mm
- Ground connector: M5 thread bolt

1) for improvement of efficiency
2) Soft start / details on request:

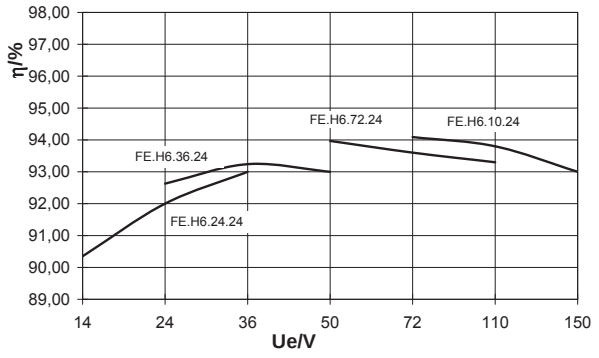


Input		Output		Model number
Uin-range	Uin nom	Uout 4)	Iout stat./dyn.3)	
V DC	V DC	V DC	A	
16,8 - 32	**24**	24	81	FE.H6.24.24.81
14,4 - 34 dyn.1)		36	54	FE.H6.24.36.54
		72	27	FE.H6.24.72.27
		110	18	FE.H6.24.10.18
25 - 47	**36**	24	88	FE.H6.36.24.88
21,6 - 51 dyn.1)		36	58	FE.H6.36.36.58
		72	29	FE.H6.36.72.29
		110	19	FE.H6.36.10.19
50 - 94	**72**	24	88	FE.H6.72.24.88
43 - 101 dyn.1)		36	58	FE.H6.72.36.58
		72	29	FE.H6.72.72.29
		110	19	FE.H6.72.10.19
77 - 143	**110**	24	88	FE.H6.10.24.88
66 - 154 dyn.1)		36	58	FE.H6.10.36.58
		72	29	FE.H6.10.72.29
		110	19	FE.H6.10.10.19

1) Uout drops to 0,86 x Unom (100ms) at dynamical minimum input voltage (0,6 x Uin)

Single projecting costs:	on request
Modification costs of possible changes above values:	on request
Adaptation electrical / mechanical:	on request
3) higher/lower currents at T_{umax} 60/85°C	on request
4) High voltage output up to 750V optional	**on request**

Efficiency



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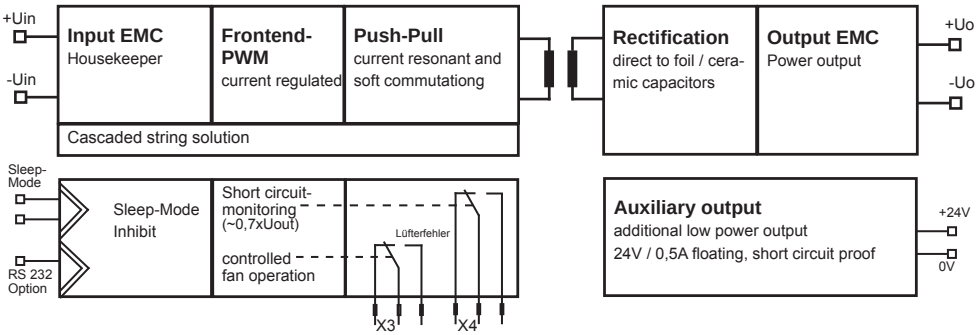
The isolated frond end solution **FE.H6** is designed for railway, ship and vehicle applications. The solution can generate an independent, constant low voltage level out of the wide varying battery input voltage (24/36/72/110VDC). The chosen double-stage switching concept results very high and constant efficiencies over whole the input voltage range. This unit also can be used as battery charger by modifying the output level to the according charging end voltage and current limitation.



System capability and high functional performance are realised with:

- the mechanical build-up (any mounting position)
- the thermal management
- the temperature and speed controlled and monitored fan operation
- the short circuit protection (dynamical and static)
- the internal auxiliary supply (house keeper)
- the current regulated, cascaded string technology with additional isolating and short circuit proof 24V/500mA auxiliary output for pre-charging, reverse polarity protection and the supply of external components

The auxiliary output is available for external loads or to supply an optional pre-charging to prevent inrush currents [2)]. The sleep mode function reduces the current consumption to <1mA. This input is transient protected and isolated and can be applied with 10 – 80 V/2 mA or 15 – 200 V/1 mA to wake up the unit. The output can run in parallel operation when the regulation is based on the primary sided intermediate level (Uo ± 4%=f(0...max. Io). A fan error(<70 % set rotation speed) is signalled with relay contact. The fan operation improves the MTBF figure and can be tested with a push-button. Optionally a dynamical over current for 10 sec. is possible.