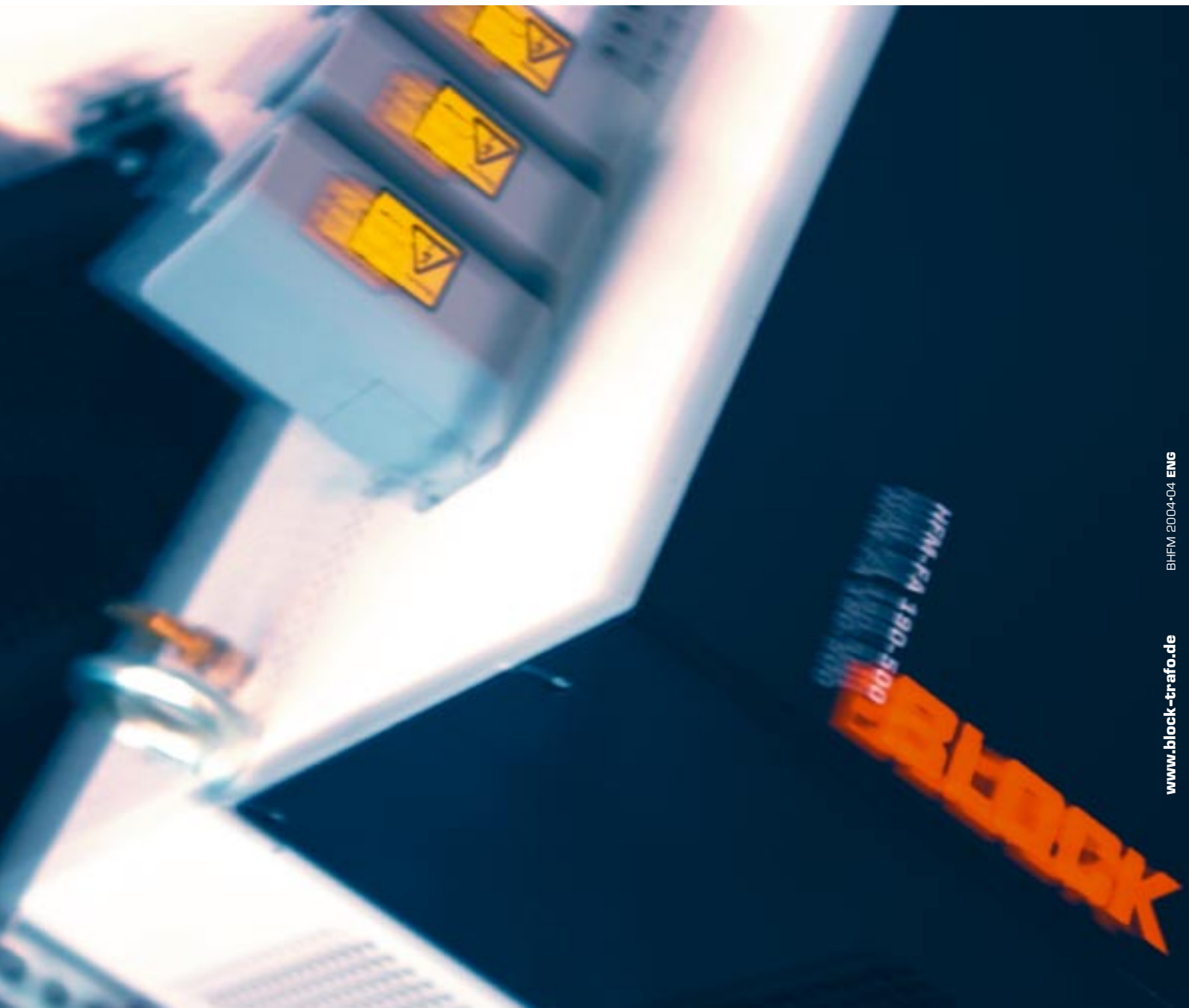


new

BLOCK 

Harmonic Filter Module HFM

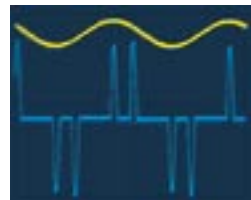




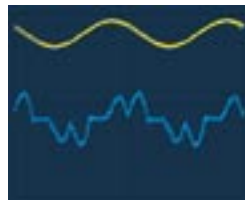
Harmonic Filter Module **HFM**

- ▶ Filter module for generating sinusoidal supply currents (THD-I \leq 15–16% according to type of inverter and load)
- ▶ 3 reduction levels available:
 - HFM-FA:** Reduction of the harmonic levels to **THD-I \leq 16%**
 - HFM-FB:** Reduction of the harmonic levels to **THD-I \leq 10%**
 - HFM-Custom-made:** Reduction of the harmonic levels to **THD-I \leq 5%**
- ▶ for all frequency inverters and intermediate circuits with B6 input bridges.
- ▶ Power range from 4 kW to 630 kW
- ▶ Compact design, up to 40% volume reduction as opposed to present systems
- ▶ Central HFM module for multiple inverter drives possible
- ▶ Low cost solution as against active systems
- ▶ Suitable for world-wide supply voltage systems
- ▶ THD-I values to request
- ▶ Power factor $0.99 = \lambda\phi$ at designated power rating
- ▶ low system losses, no dynamics losses of the drive unit
- ▶ No reduction in intermediate circuit voltage.
- ▶ Easy installation
- ▶ Construction to UL 508, VDE 0570/EN 61558

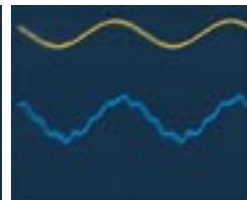
THD-I comparison measurements (Total Harmonic distortion Current) at the frequency inverter. Block delivers the product tailored to your supply network.



Current waveform at the frequency inverter without filter



Current waveform at the frequency inverter with NKD reactor

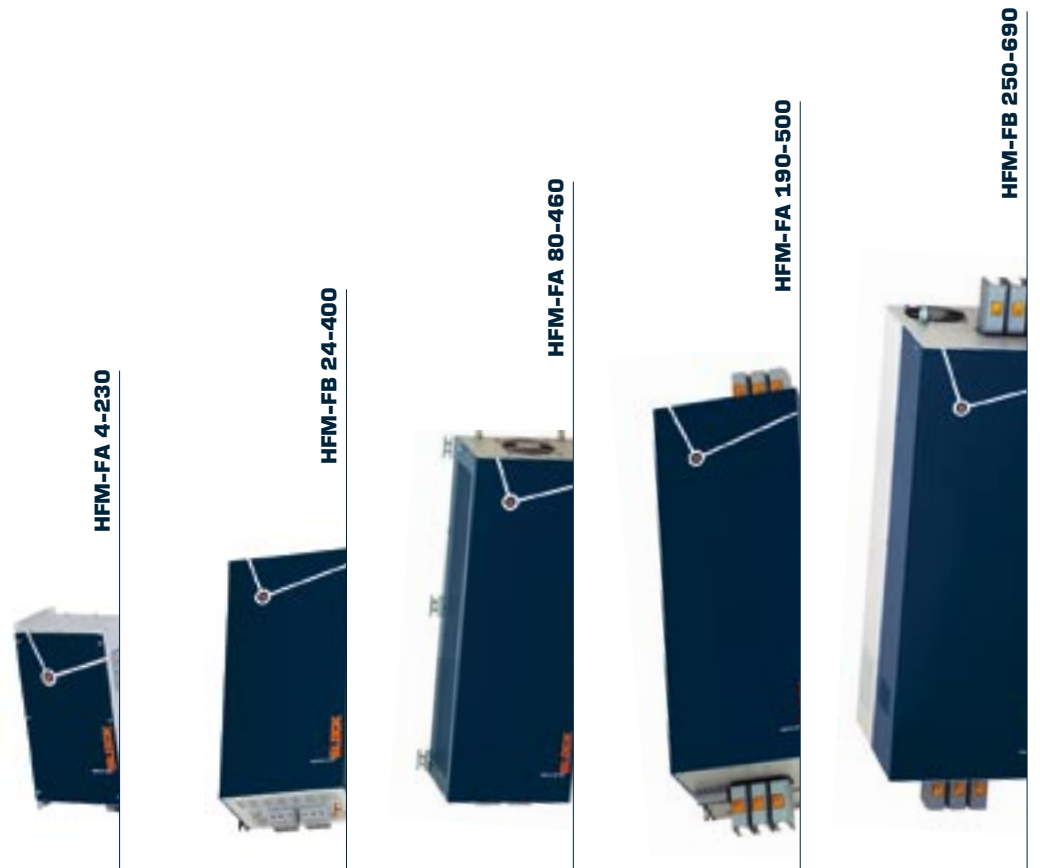


Current waveform at the frequency inverter with harmonic filter type HFM-FA



Current waveform at the frequency inverter with harmonic filter type HFM-FB

Block Harmonic filter modules may be implemented in any application, where harmonics must be reduced to a specific level e.g. Independent energy suppliers such as cruise ships or in heavy industry like milling



Designated Voltage		230 V	400 V	460 V	500 V	690 V
Designated range for phase-phase voltage	U_N [V]	$220 \leq U_N \leq 240$	$380 \leq U_N \leq 415$	$440 \leq U_N \leq 480$	500	$600 \leq U_N \leq 480$
Tolerance of the mains phase-phase voltage	U_N [V]	$198 \leq U_N \leq 264$	$342 \leq U_N \leq 456$	$396 \leq U_N \leq 528$	$450 \leq U_N \leq 550$	$540 \leq U_N \leq 770$
Mains frequency	f_N [Hz]	$50 \pm 5\%$	$50 \pm 5\%$	$60 \pm 5\%$	$50 \pm 5\%$	$50 \pm 5\%$
OVERRATING CAPACITY	[%]	150				
Efficiency	η	typ. 98%				
Power factor $\lambda\phi$		at 75% I_N : 0,85 cap at 100% I_N : 0,99 cap at 150% I_N : 1,00 cap				
Power de-rating	[%/K]	$40^\circ\text{C} < T_a < 55^\circ\text{C} \Rightarrow > 3\%/K$				
Power de-rating	[%/m]	1000 m above sea level $< h \leq 4000$ m above sea level $\Rightarrow > 5\%/1000$ m				
THD-I	[%]	HFM-FA < 16 , HFM-FB $< 10^*$				
AC power I_{eff} 100%, types	[A]	10 18 25 45 63 101 138 176 214	10 19 26 35 43 72 101 144 180 217 289 325	19 26 35 43 72 101 144 182 219 289 325	10 19 27 35 46 70 104 144 179 219 289 325	59 92 126 209

Apart from the standard range HFM-A and HFM-B, Block can also offer Custom-made HFM models on request.

*in compliance to the electrical operating conditions.

The harmonic filter modules from Block are available in three typical THD reduction levels

HFM-FA	THD-I $\leq 16\%$	adaptable EN 61 000-3-4/3-12	R_{SCE} 600–250	IEEE 519-1992
HFM-FB	THD-I $\leq 10\%$	adaptable EN 61 000-3-4/3-12	R_{SCE} 250–33	IEEE 519-1992
HFM Custom-made	THD I $\leq 5\%$	adaptable EN 61 000-3-2		class A

typical values at full load





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