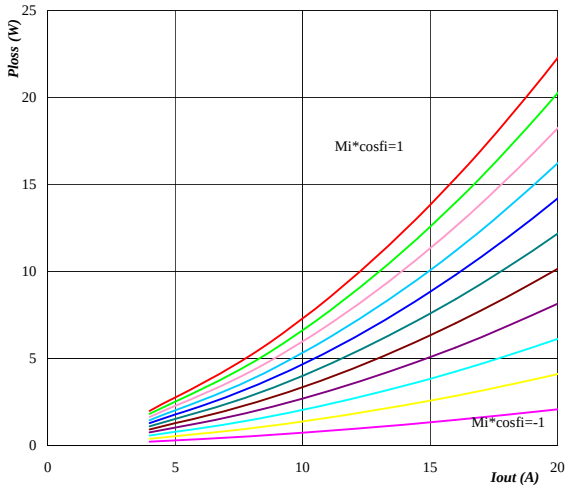
Output inverter application

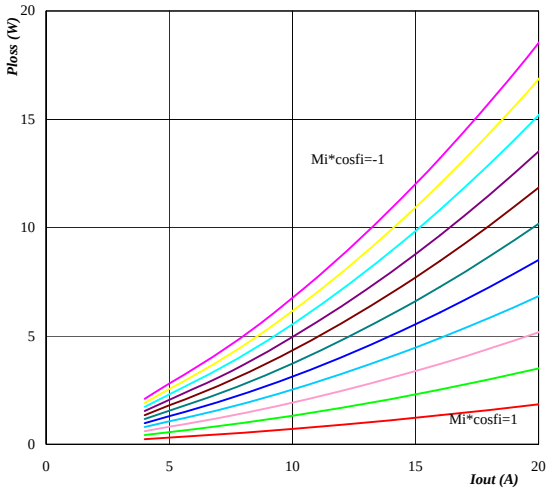
General conditions: 3 phase SPWM, Vgeon= 15 V Rgon= 36 Ohm Rgoff= 36 Ohm
Vgeoff= -15 V

Figure 1. Typical avarage static loss as a function of output current
IGBT Ploss=f(Iout)



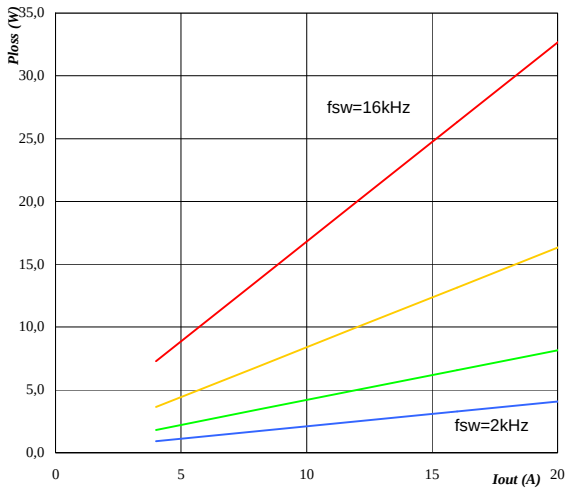
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

Figure 2. Typical avarage static loss as a function of output current
FRED Ploss=f(Iout)



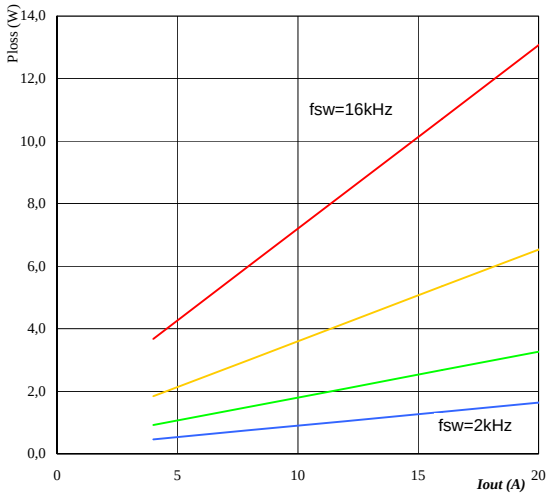
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

Figure 3. Typical avarage switching loss as a function of output current
IGBT Ploss=f(Iout)



Conditions: Tj=125°C
DC link= 600 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Figure 4. Typical avarage switching loss as a function of output current
FRED Ploss=f(Iout)



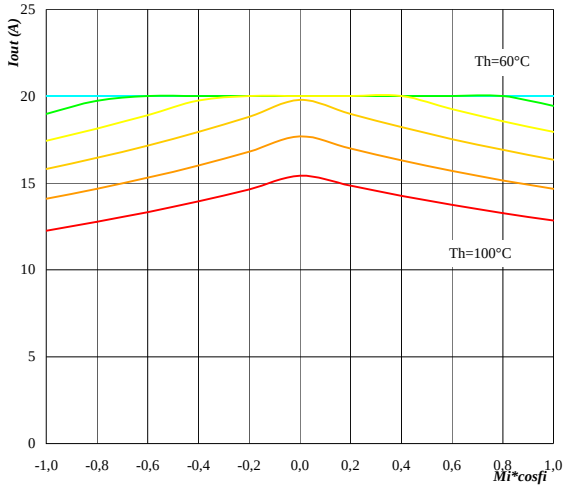
Conditions: Tj=125°C
DC link= 600 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Output inverter application

General conditions: 3 phase SPWM, Vgeon= 15 V Rgon= 36 Ohm Rgoff= 36 Ohm
Vgeoff= -15 V

Figure 5. Typical available 50Hz output current as a function of Mi*cosfi

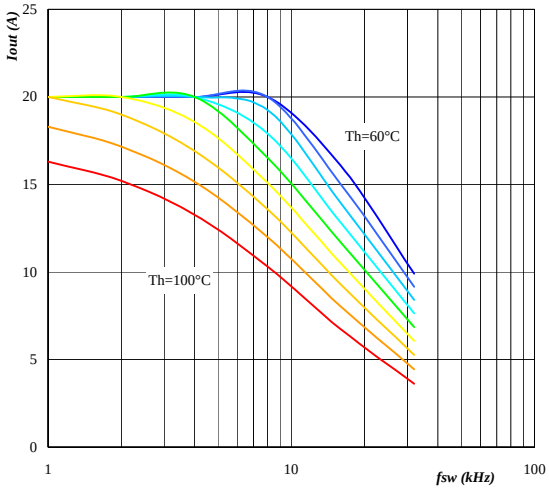
Phase Iout=f(Mi*cosfi)



Conditions: Tj=125°C
DC link= 600 V
fsw= 4 kHz
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 6. Typical available 50Hz output current as a function of switching frequency

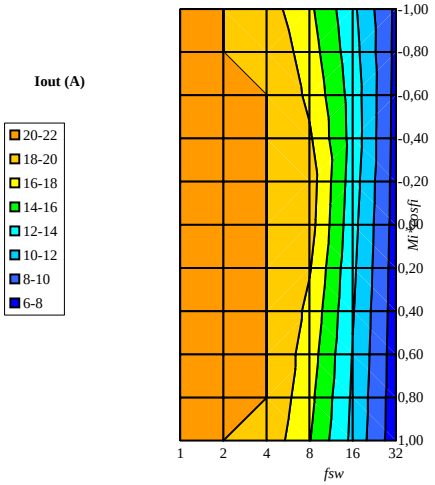
Phase Iout=f(fsw)



Conditions: Tj=125°C
DC link= 600 V
Mi*cosfi= 0,8
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 7. Typical available 50Hz output current as a function of Mi*cosfi and fsw

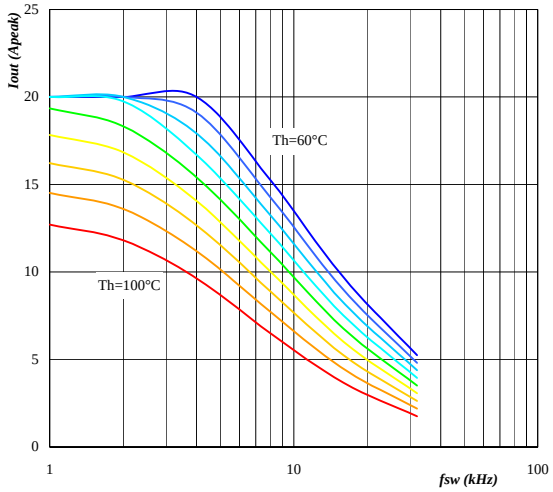
Phase Iout=f(fsw,Mi*cosfi)



Conditions: Tj=125°C
DC link= 600 V
Th= 80 °C

Figure 8. Typical available 0Hz output current as a function of switching frequency

Phase Ioutpeak=f(fsw)



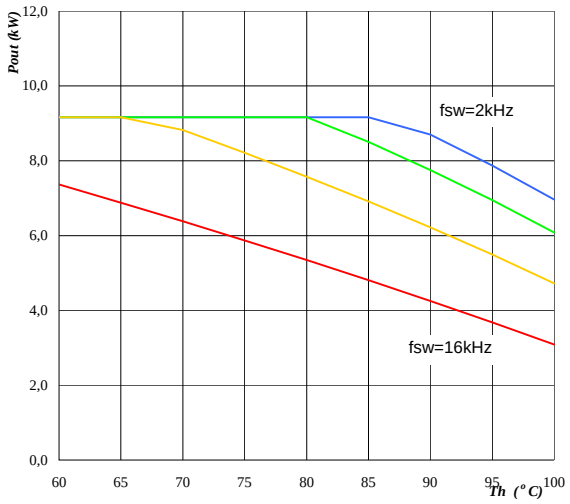
Conditions: Tj=125°C
DC link= 600 V
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Output inverter application

General conditions: 3 phase SPWM, Vgeon= 15 V
Vgeoff= -15 V
Rgon= 36 Ohm
Rgoff= 36 Ohm

Figure 9. Typical available electric peak output power as a function of heatsink temperature

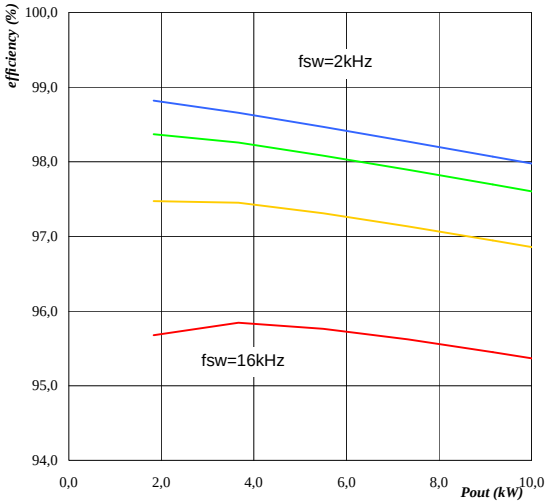
Inverter Pout=f(Th)



Conditions: Tj=125°C
DC link= 600 V
Modulation index Mi= 1
cosfi= 0,80
Switching freq. parameter: fsw from 2 kHz to 16 kHz in * 2 steps

Figure 10. Typical efficiency as a function of output power

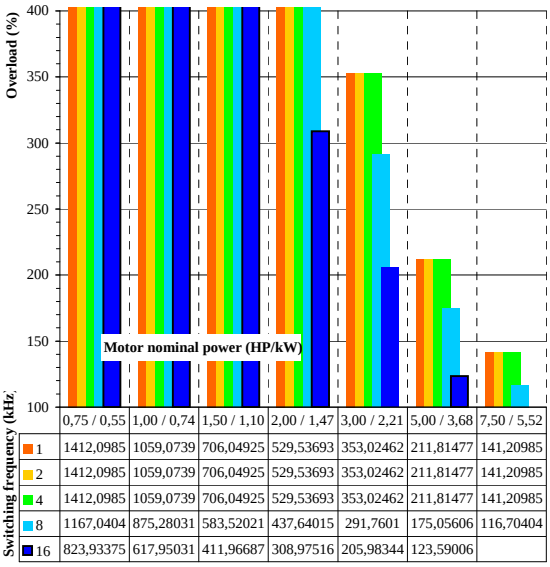
Inverter efficiency=f(Pout)



Conditions: Tj=125°C
DC link= 600 V
Modulation index Mi= 1
cosfi= 0,80
Switching freq. parameter: fsw from 2 kHz to 16 kHz in * 2 steps

Figure 11. Typical available overload factor as a function of motor power and switching frequency

Inverter Ppeak/Pnom=f(Pnom,fsw)



Switching frequency (kHz)	0,75 / 0,55	1,00 / 0,74	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52
1	1412,0985	1059,0739	706,04925	529,53693	353,02462	211,81477	141,20985
2	1412,0985	1059,0739	706,04925	529,53693	353,02462	211,81477	141,20985
4	1412,0985	1059,0739	706,04925	529,53693	353,02462	211,81477	141,20985
8	1167,0404	875,28031	583,52021	437,64015	291,7601	175,05606	116,70404
16	823,93375	617,95031	411,96687	308,97516	205,98344	123,59006	

Conditions: Tj=125°C
DC link= 600 V
Modulation index Mi= 1
cosfi= 0,8
Switching freq. parameter: fsw from 1 kHz to 16 kHz in * 2 steps
Heatsink temperature= 80 °C
Motor efficiency= 0,85