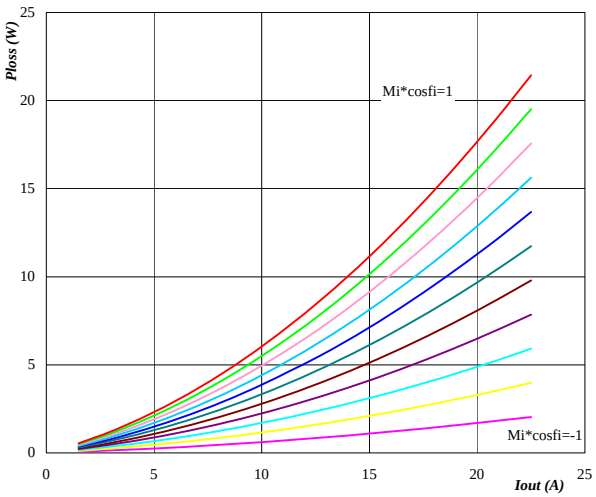
Output inverter application

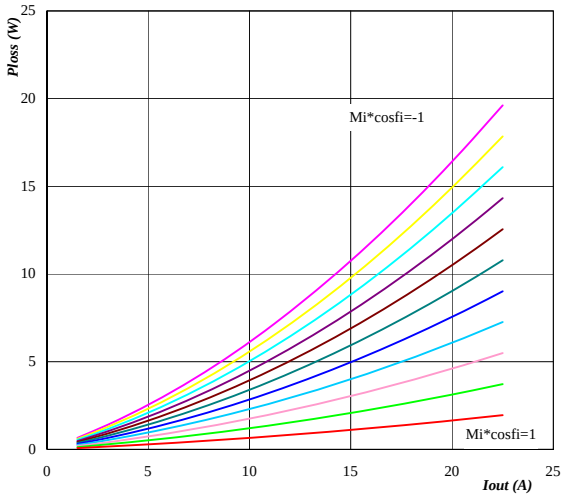
General conditions 3 phase SPWM, Vgeon= 15 V
Vgeoff= 0 V
Rgon= 16 Ω Rgoff= 8 Ω

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



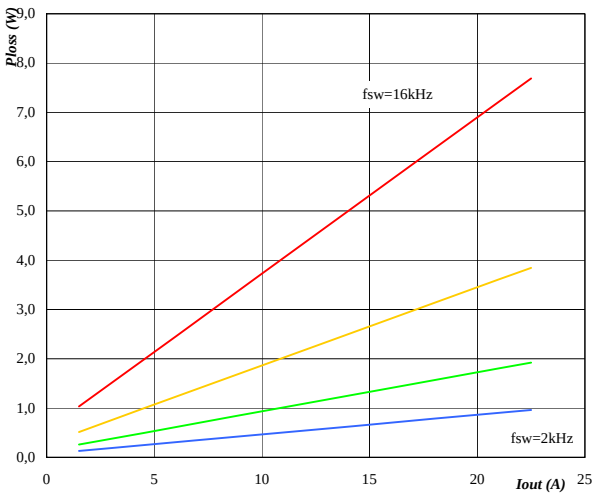
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

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



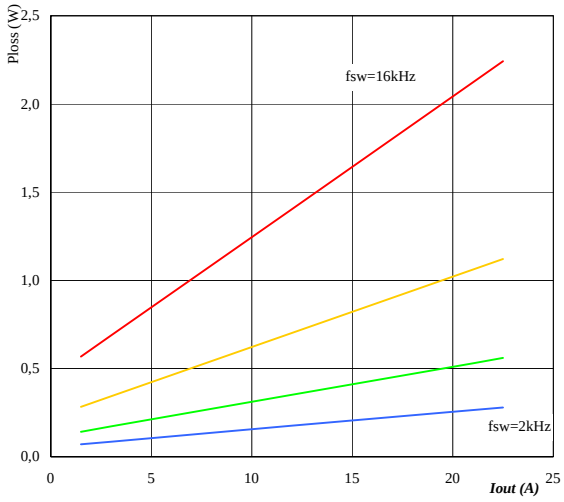
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

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



Conditions: Tj=125°C
DC link= 300 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)



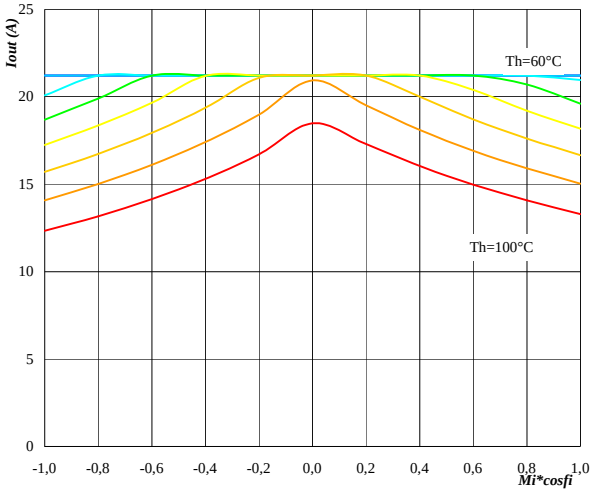
Conditions: Tj=125°C
DC link= 300 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Output inverter application

General conditions 3 phase SPWM, Vgeon= 15 V, Vgeoff= 0 V, Rgon= 16 Ω, Rgoff= 8 Ω

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

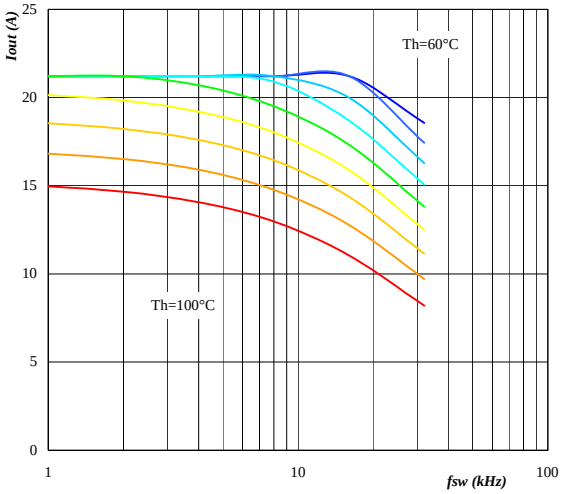
Phase Iout=f(Mi*cosfi)



Conditions: Tj=125°C
DC link= 300 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

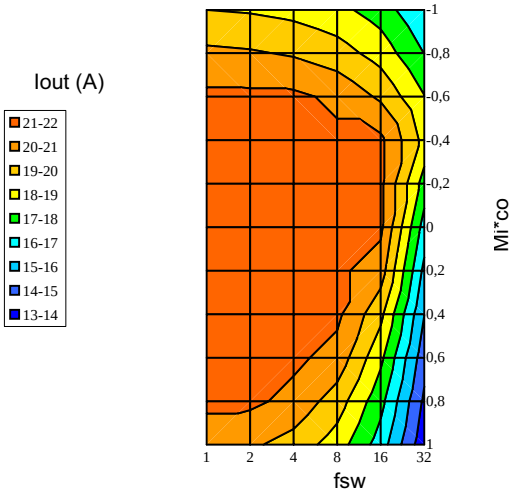
Phase Iout=f(fsw)



Conditions: Tj=125°C
DC link= 300 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

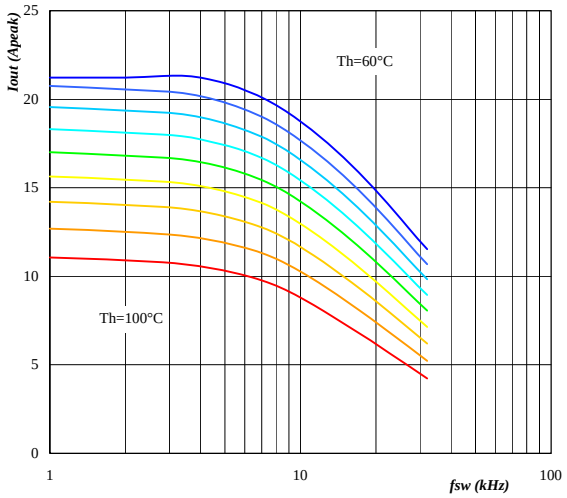
Phase Iout=f(fsw,Mi*cosfi)



Conditions: Tj=125°C
DC link= 300 V
Th= 80 °C

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

Phase Ioutpeak=f(fsw)



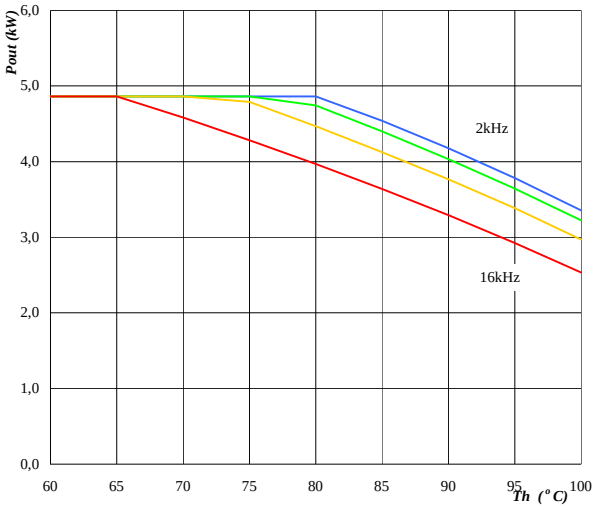
Conditions: Tj=125°C
DC link= 300 V
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Output inverter application

General conditions 3 phase SPWM, Vgeon= 15 V, Vgeoff= 0 V, Rgon= 16 Ω, Rgoff= 8 Ω

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

Inverter Pout=f(Th)

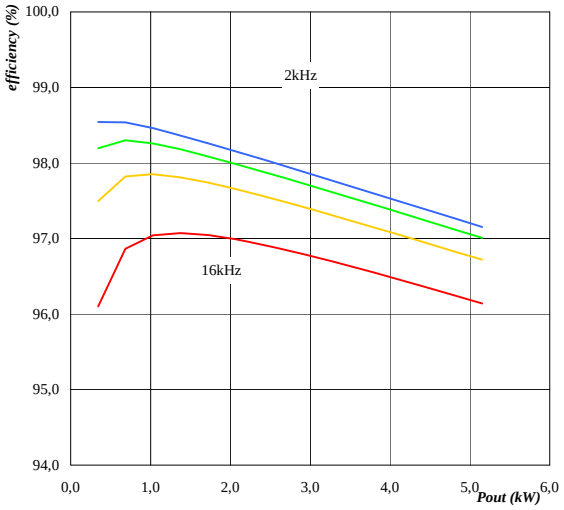


Conditions: Tj=125°C, DC link= 300 V, Modulation index Mi= 1, cosfi= 0,80

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)

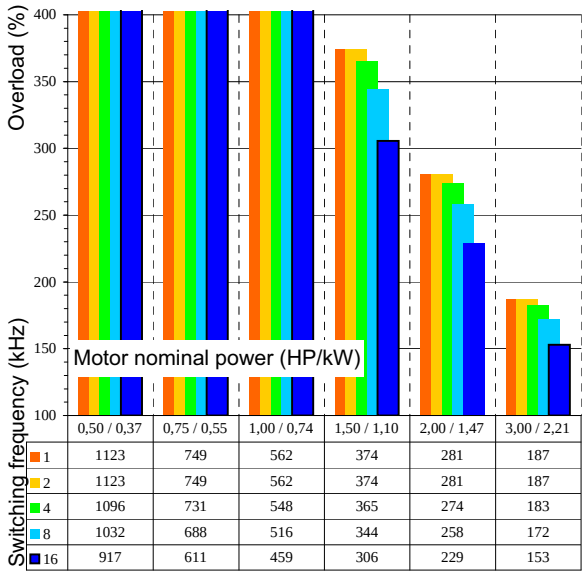


Conditions: Tj=125°C, DC link= 300 V, Modulation index Mi= 1, cosfi= 0,80

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)	0,50 / 0,37	0,75 / 0,55	1,00 / 0,74	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21
1	1123	749	562	374	281	187
2	1123	749	562	374	281	187
4	1096	731	548	365	274	183
8	1032	688	516	344	258	172
16	917	611	459	306	229	153

Conditions: Tj=125°C, DC link= 300 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