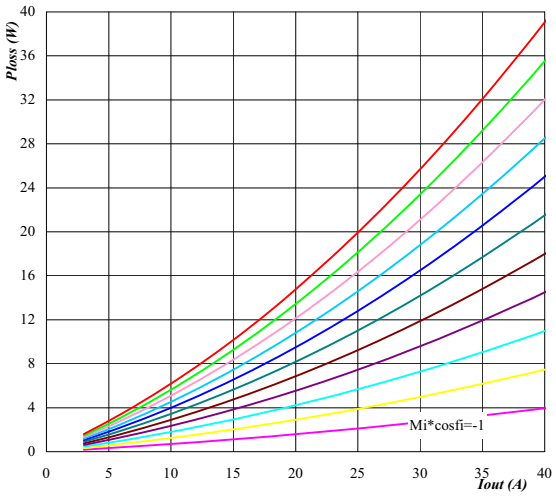
flowPIM® 1 2nd generation

Output inverter application

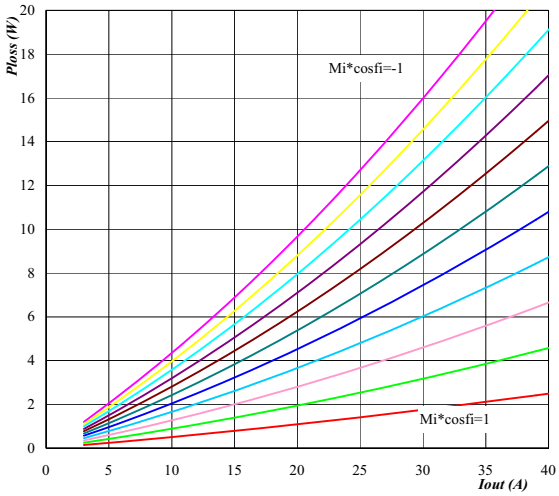
General conditions: 3 phase SPWM, Vgeon= 15 V Vgeoff=0V Rgon= 16 Ω Rgoff= 8 Ω

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



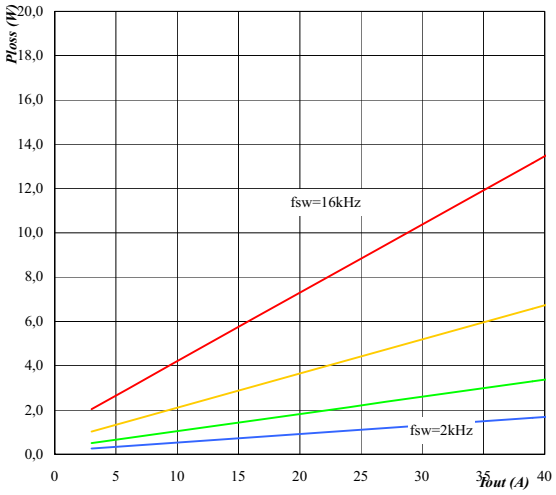
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

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



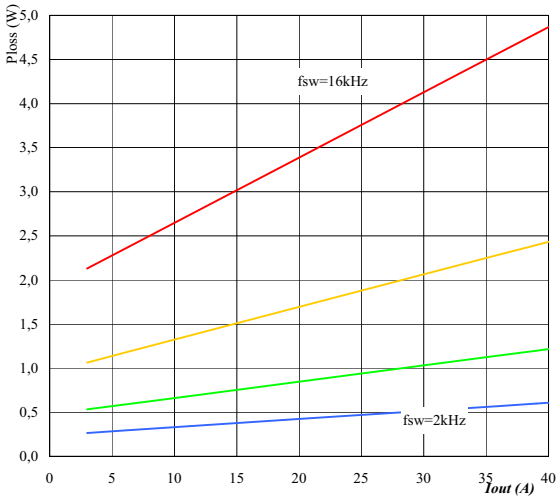
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

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



Conditions: Tj=125°C
DC link= 320 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)



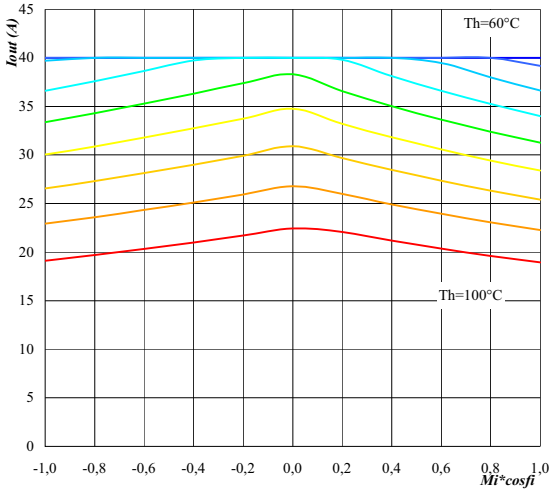
Conditions: Tj=125°C
DC link= 320 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Output inverter application

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

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

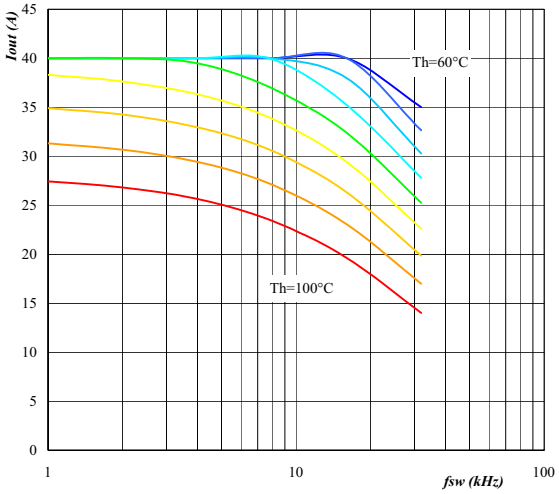
Phase Iout=f(Mi*cosfi)



Conditions: Tj=125°C
DC link= 320 V
fsw= 16 kHz
Heatsink temp. parameter: Th from 60 °C to 100 °C in 5 °C steps

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

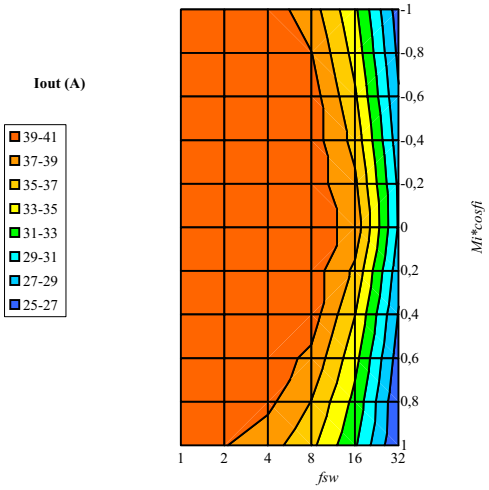
Phase Iout=f(fsw)



Conditions: Tj=125°C
DC link= 320 V
Mi*cosfi= 0,8
Heatsink temp. parameter: Th from 60 °C to 100 °C in 5 °C steps

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

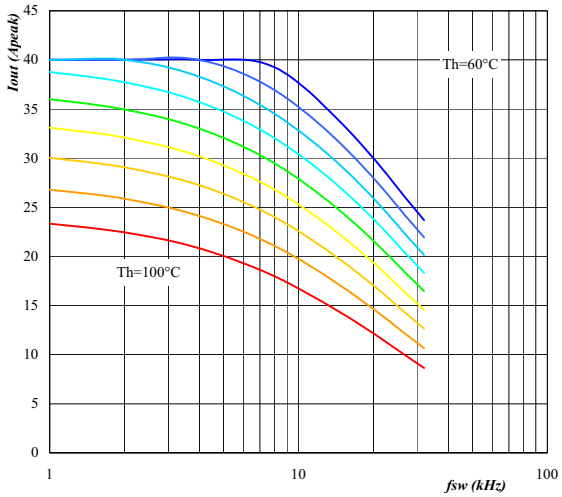
Phase Iout=f(fsw,Mi*cosfi)



Conditions: Tj=125°C
DC link= 320 V
Th= 80 °C

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

Phase Ioutpeak=f(fsw)



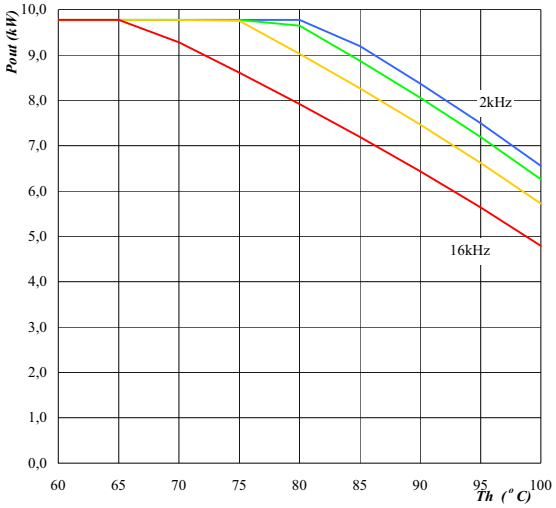
Conditions: Tj=125°C
DC link= 320 V
Heatsink temp. parameter: Th from 60 °C to 100 °C in 5 °C steps

Output inverter application

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

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

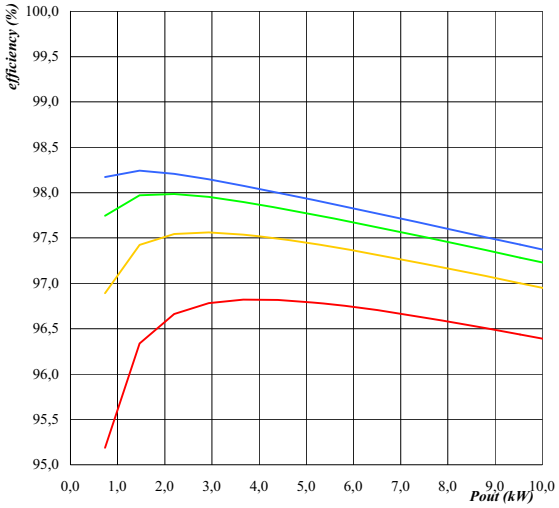
Inverter Pout=f(Th)



Conditions: Tj=125°C
DC link= 320 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

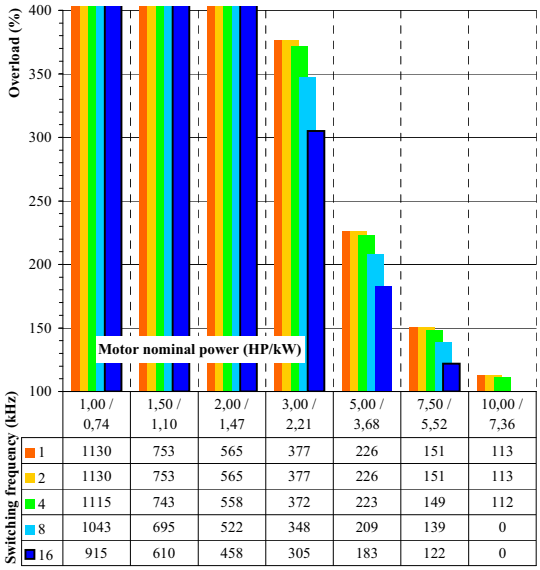
Inverter efficiency=f(Pout)



Conditions: Tj=125°C
DC link= 320 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)	1,00 / 0,74	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36
1	1130	753	565	377	226	151	113
2	1130	753	565	377	226	151	113
4	1115	743	558	372	223	149	112
8	1043	695	522	348	209	139	0
16	915	610	458	305	183	122	0

Conditions: Tj=125°C
DC link= 320 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