flowPACK 0 3rd gen — Output Inverter Application — 1200V/10A

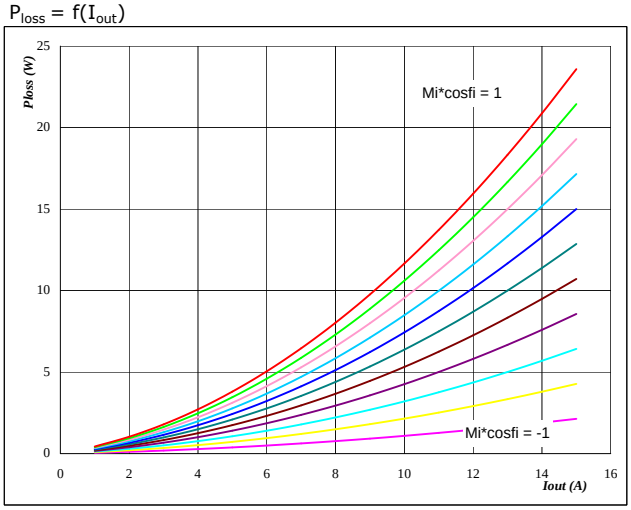
General conditions

3phase SPWM		
V_{GEon}	=	15 V
V_{GEoff}	=	-15 V
R_{gon}	=	32 Ω
R_{goff}	=	32 Ω

Figure 1 IGBT

Typical average static loss as a function of output current

$P_{loss} = f(I_{out})$



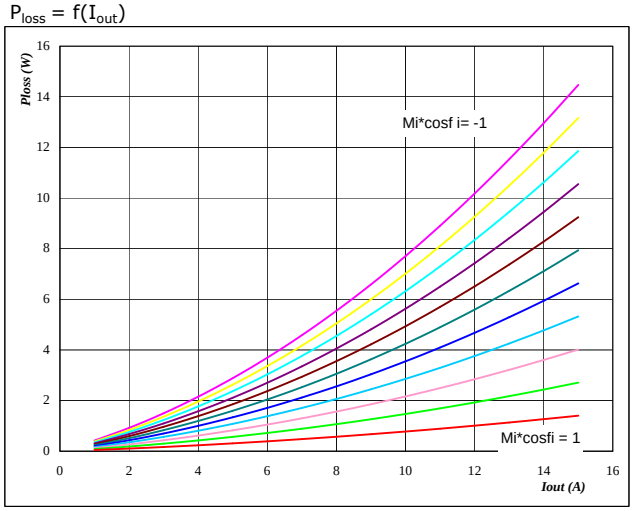
T_j = 150 °C

Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2 FRED

Typical average static loss as a function of output current

$P_{loss} = f(I_{out})$

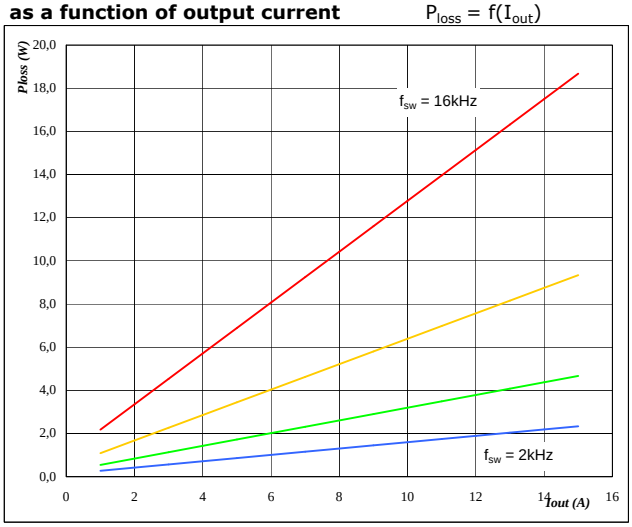


T_j = 150 °C

Mi*cosfi from -1 to 1 in steps of 0,2

Figure 3 IGBT

Typical average switching loss as a function of output current $P_{loss} = f(I_{out})$



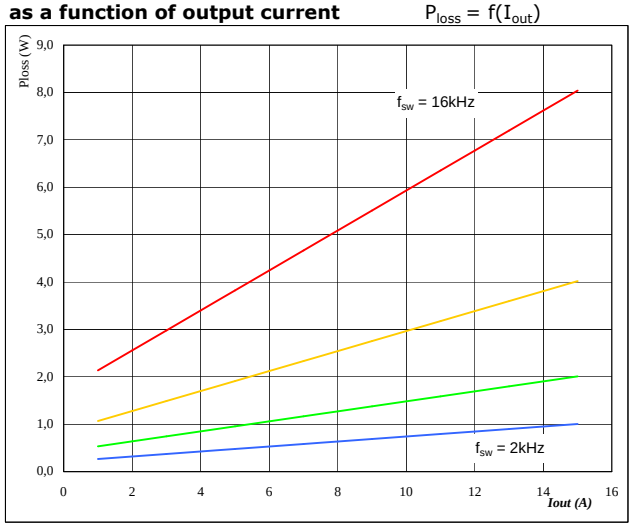
T_j = 150 °C

DC link = 600 V

f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 4 FRED

Typical average switching loss as a function of output current $P_{loss} = f(I_{out})$



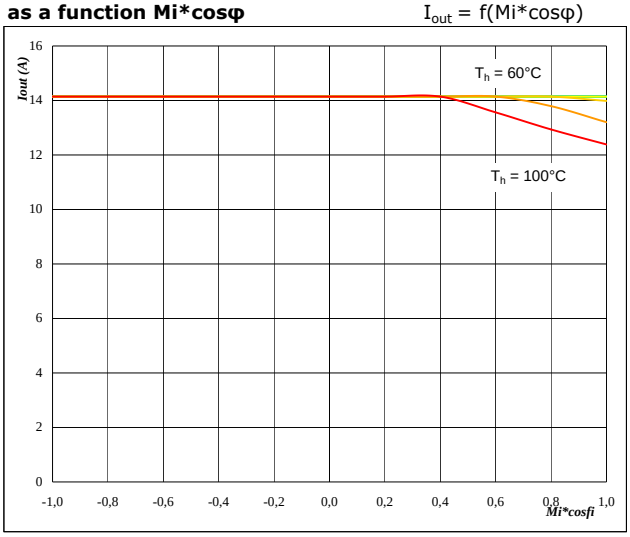
T_j = 150 °C

DC link = 600 V

f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 5 Phase

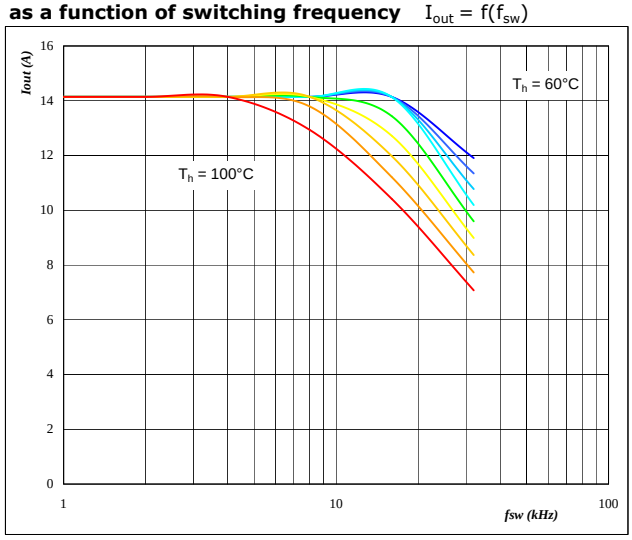
Typical available 50Hz output current as a function Mi*cosφ $I_{out} = f(Mi*cos\varphi)$



T_j = 150 °C
DC link = 600 V
f_{sw} = 8 kHz
T_h from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase

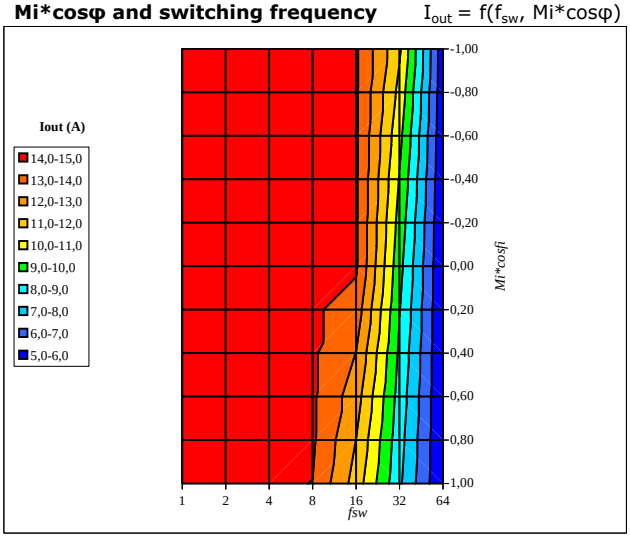
Typical available 50Hz output current as a function of switching frequency $I_{out} = f(f_{sw})$



T_j = 150 °C
DC link = 600 V
Mi*cosφ = 0,8
T_h from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase

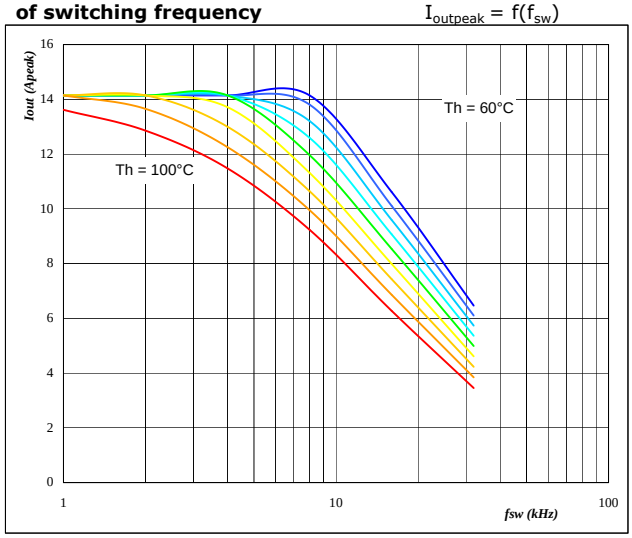
Typical available 50Hz output current as a function of Mi*cosφ and switching frequency $I_{out} = f(f_{sw}, Mi*cos\varphi)$



T_j = 150 °C
DC link = 600 V
T_h = 90 °C

Figure 8 Phase

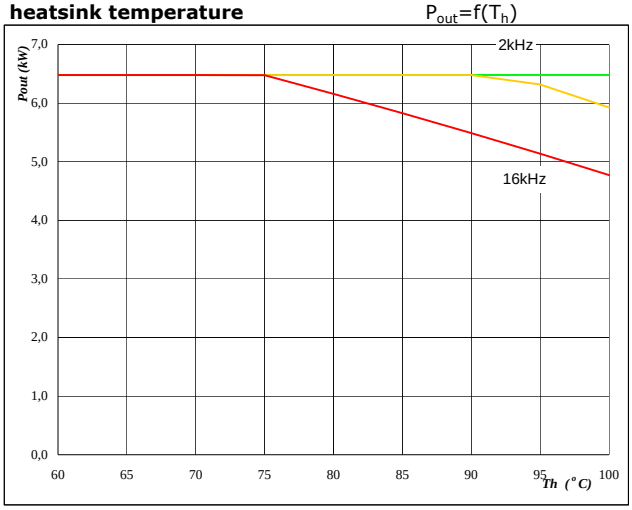
Typical available 0Hz output current as a function of switching frequency $I_{outpeak} = f(f_{sw})$



T_j = 150 °C
DC link = 600 V
T_h from 60 °C to 100 °C in steps of 5 °C

Figure 9 Inverter

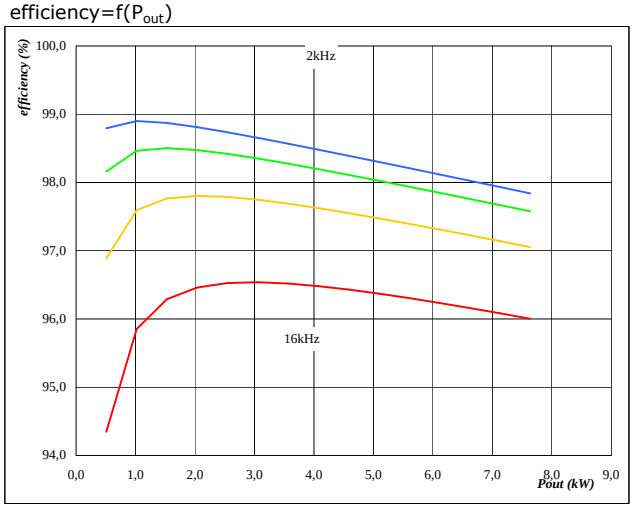
Typical available peak output power as a function of heatsink temperature $P_{out}=f(T_h)$



T_j = 150 °C
DC link = 600 V
Mi = 1
cosφ = 0,80
f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 10 Inverter

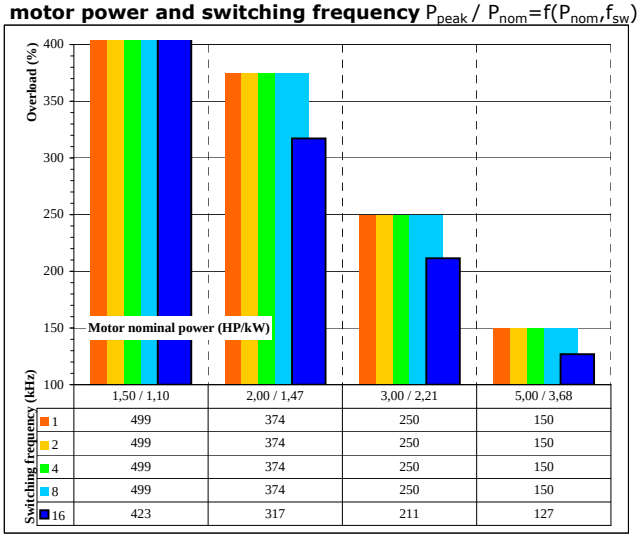
Typical efficiency as a function of output power efficiency=f(P_{out})



T_j = 150 °C
DC link = 600 V
Mi = 1
cosφ = 0,80
f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 11 Inverter

Typical available overload factor as a function of motor power and switching frequency $P_{peak} / P_{nom}=f(P_{nom}, f_{sw})$



Switching frequency (kHz)	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68
1	499	374	250	150
2	499	374	250	150
4	499	374	250	150
8	499	374	250	150
16	423	317	211	127

T_j = 150 °C
DC link = 600 V
Mi = 1
cosφ = 0,8
f_{sw} from 1 kHz to 16 kHz in 2 steps
T_h = 90 °C
Motor eff = 0,85