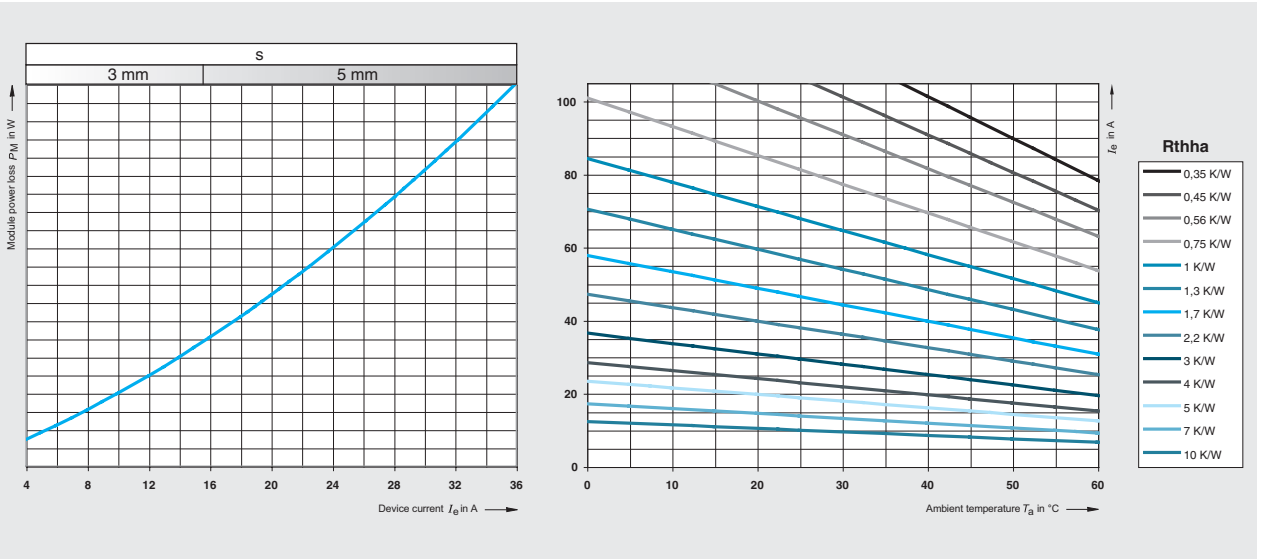
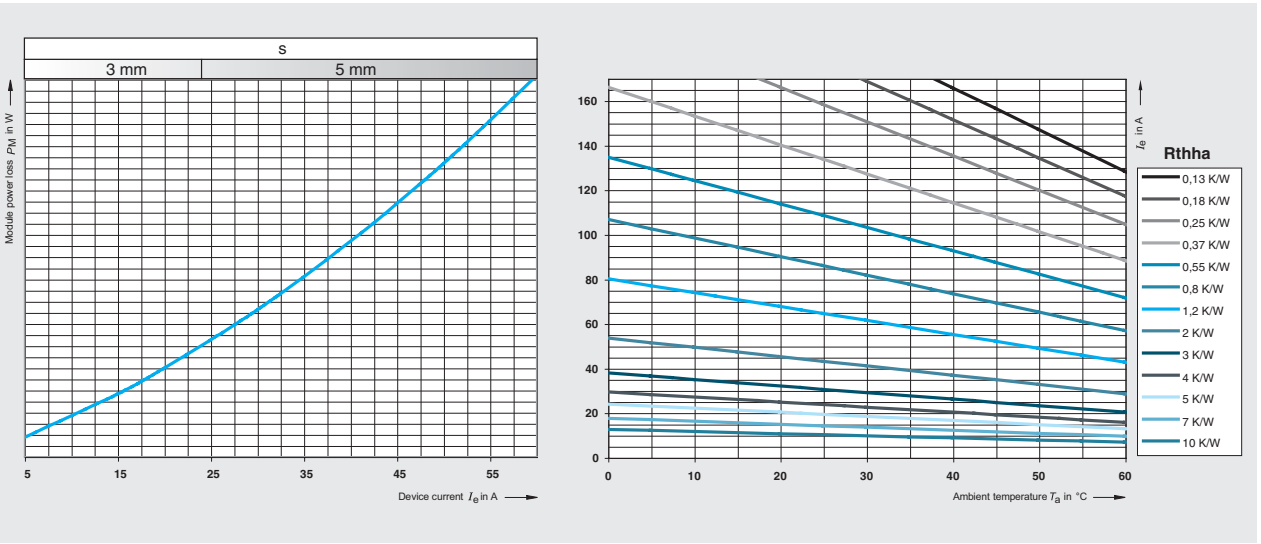
3RF22 solid-state relays, 3-phase, 45 mm

Characteristic curves

Dependence of the device current I_e on the ambient temperature T_a (two-phase controlled)

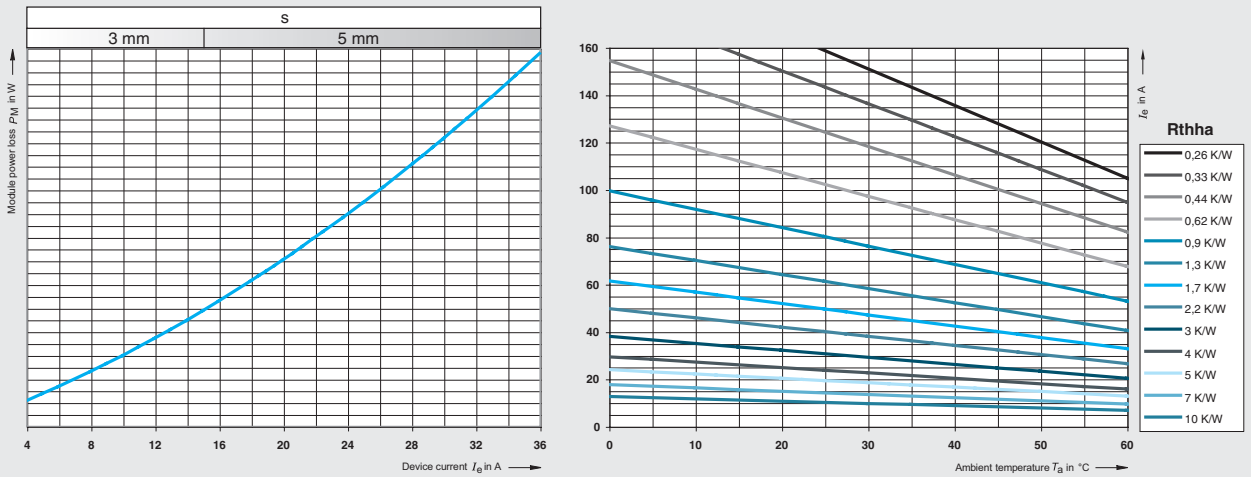


Type current 30 A (3RF22 30-.AB..)

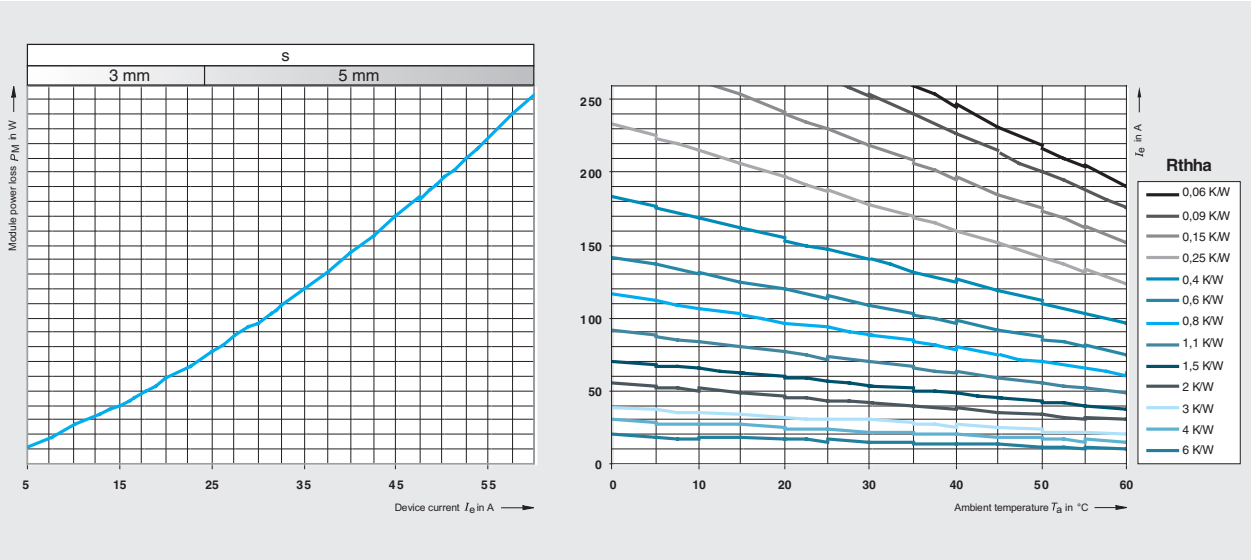


Type current 55 A (3RF22 55-.AB..)

Dependence of the device current I_e on the ambient temperature T_a (three-phase controlled)



Type current 30 A (3RF22 30-.AC..)



Type current 55 A (3RF22 55-.AC..)

Arrangement example

Given conditions: I_e = 55 A and T_a = 40 C.
The task is to find the thermal resistance R_{thha} and the heat sink overtemperature dT_{ha}.

From the diagram on the left → P_M = 227 W,
from the diagram on the right → R_{thha} = 0.09 K/W.

This results in:

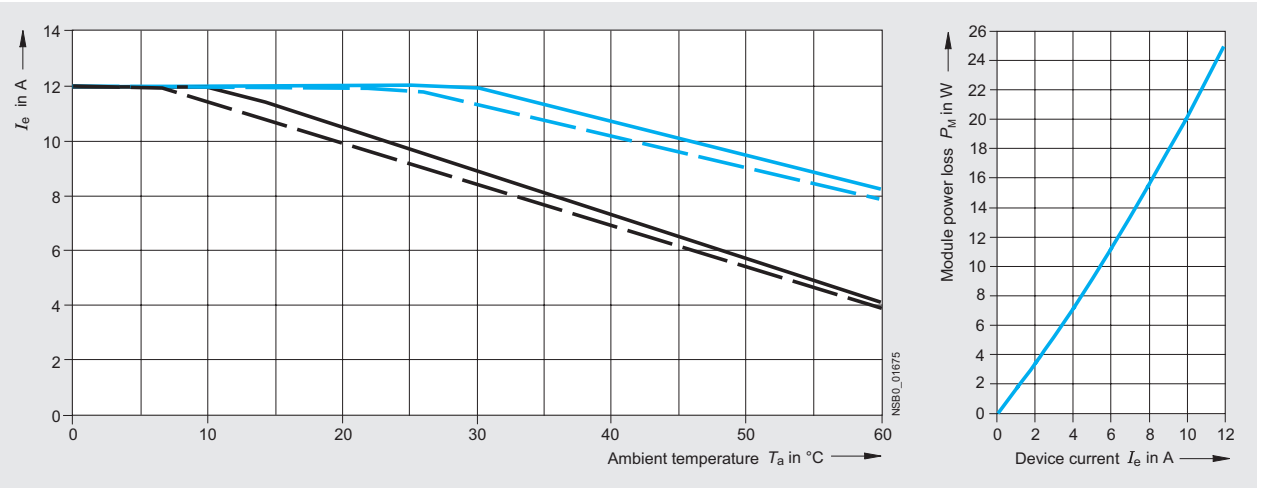
$dT_{ha} = R_{thha} \times PM = 0.09\ K/W \times 227\ W = 20.4\ K$.

At dT_{ha} = 20.4 K the heat sink must therefore have an R_{thha} = 0.09 K/W.

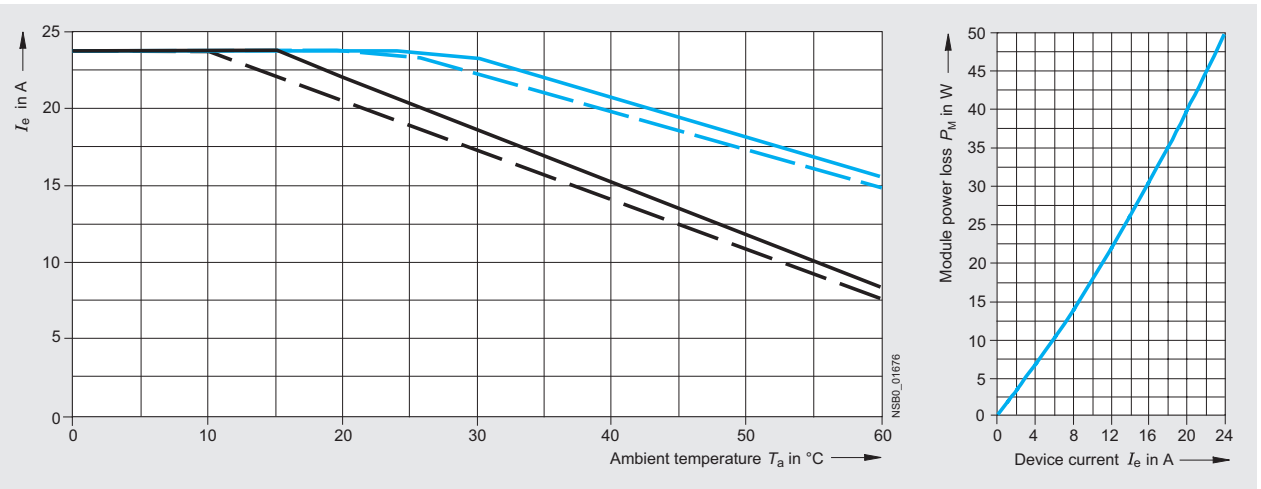
3RF24 solid-state contactors, 3-phase

Characteristic curves

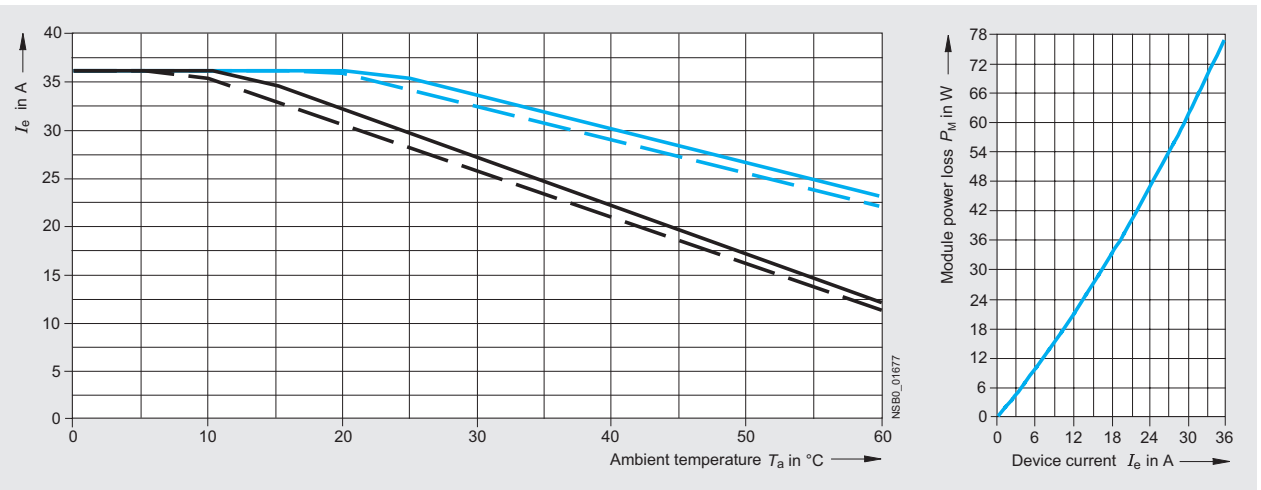
Derating curves, two-phase controlled



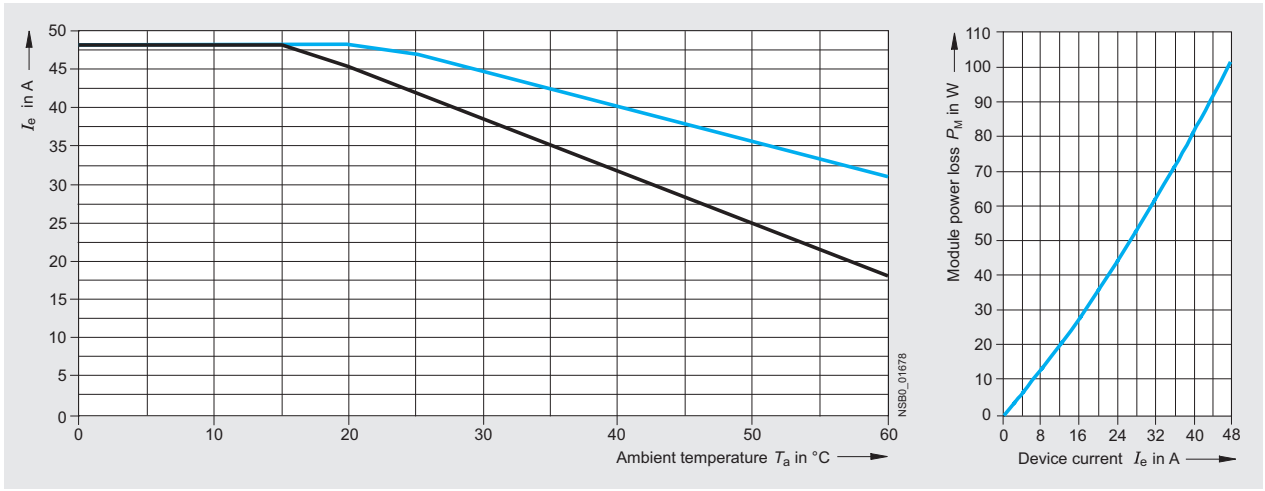
Type current 10.5 A (3RF24 10-.AB..)



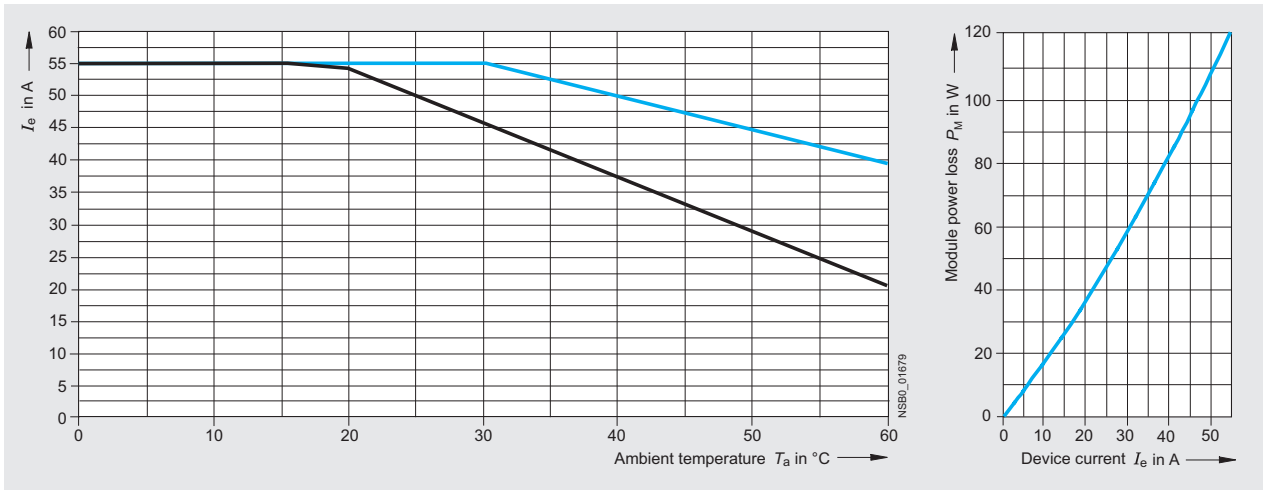
Type current 20 A (3RF24 20-.AB..)



Type current 30 A (3RF24 30-.AB..)



Type current 40 A (3RF24 40-.AB..)[1)]



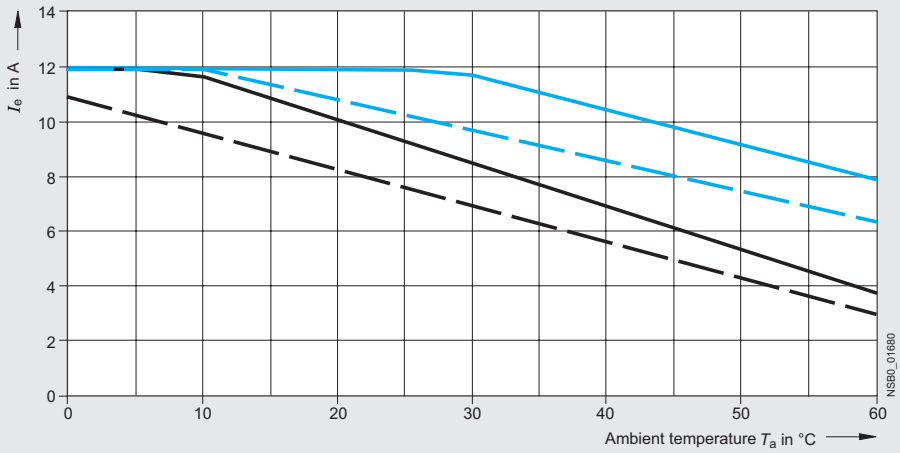
Type current 50 A (3RF24 50-.AB..)[1)]

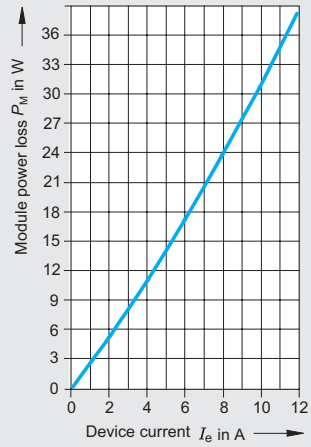
I_{max} Thermal limit current for individual mounting
I_{max} Thermal limit current for side-by-side mounting
I_{IEC} Current acc. to IEC 947-4-3 for individual mounting
I_{IEC} Current acc. to IEC 947-4-3 for side-by-side mounting

1) Identical current/temperature curves for stand-alone and side-by-side installation.

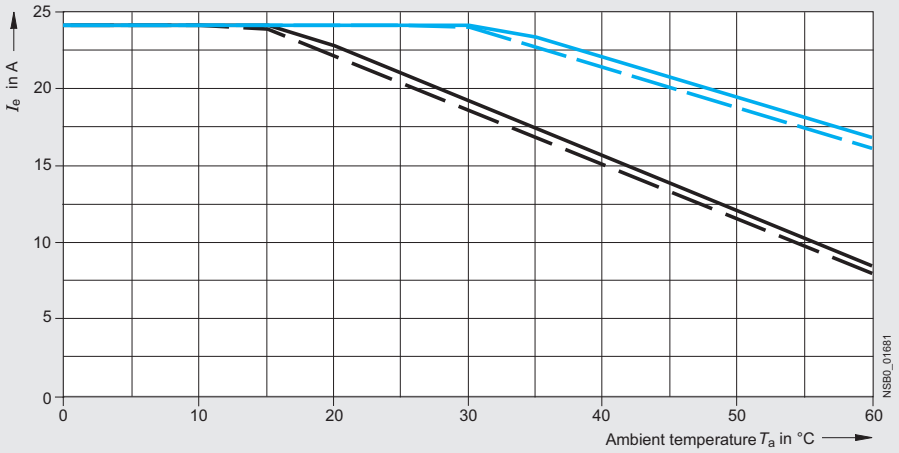
3RF24 solid-state contactors, 3-phase

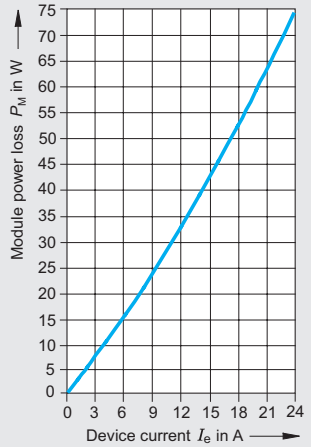
Derating curves, three-phase controlled





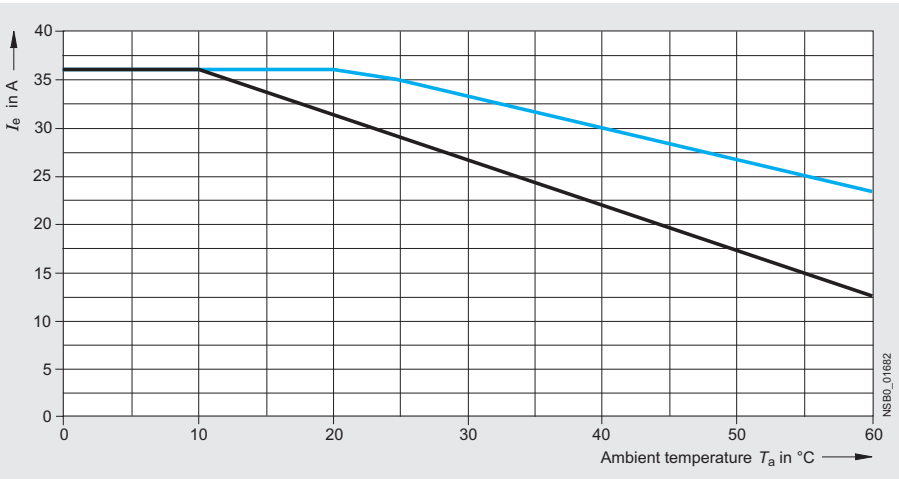
Type current 10.5 A (3RF24 10-.AC..)

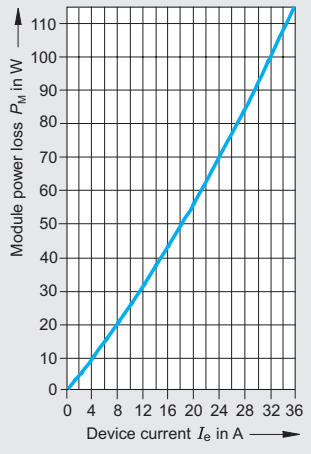




Type current 20 A (3RF24 20-.AC..)

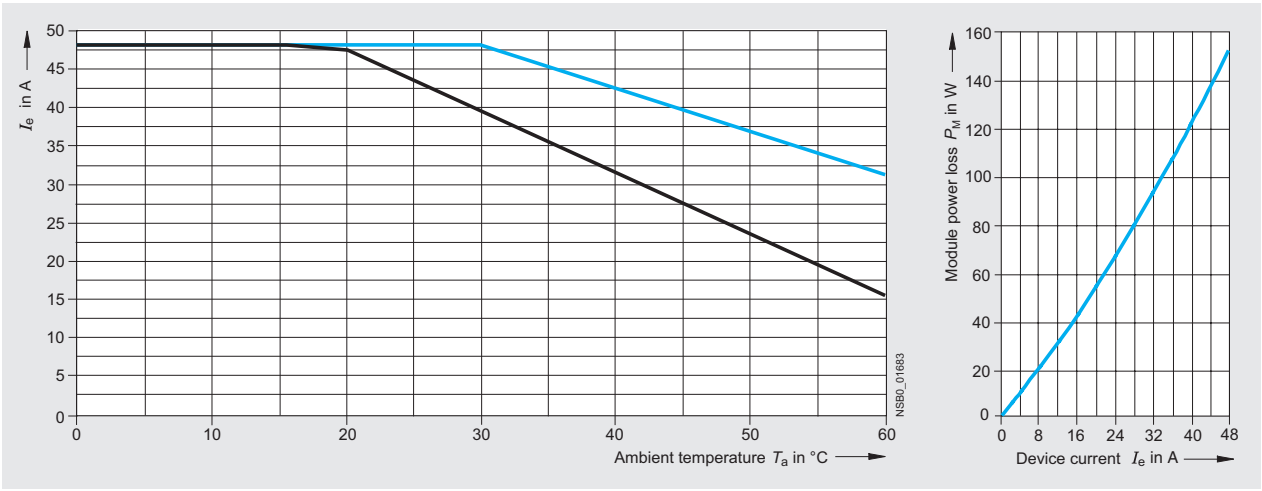
1) Identical current/temperature curves for stand-alone and side-by-side installation.



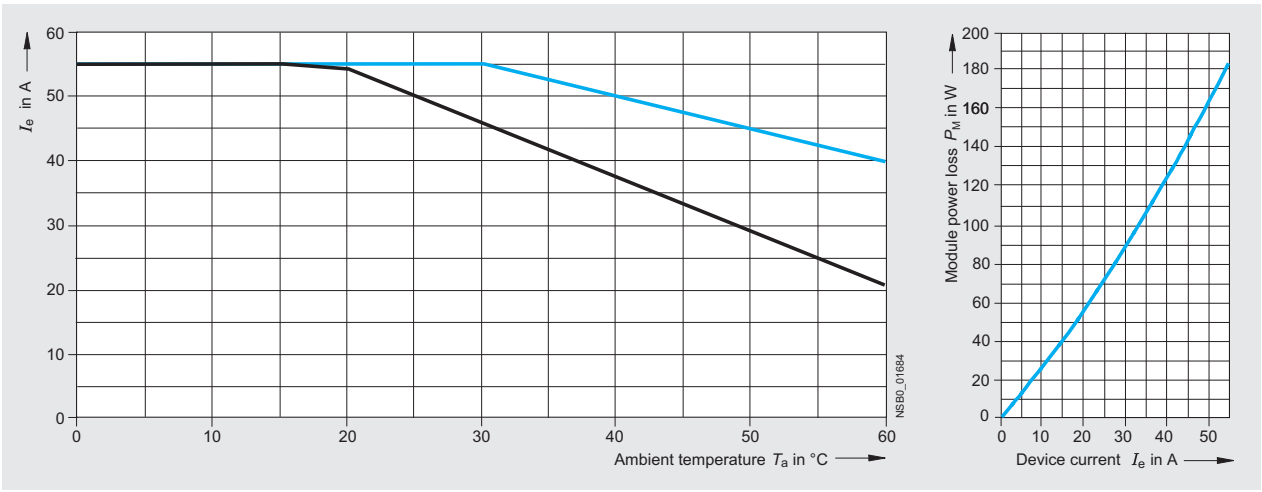


Type current 30 A (3RF24 30-.AC..)[1)]

1) Identical current/temperature curves for stand-alone and side-by-side installation.



Type current 40 A (3RF24 40-.AC..)[1)]



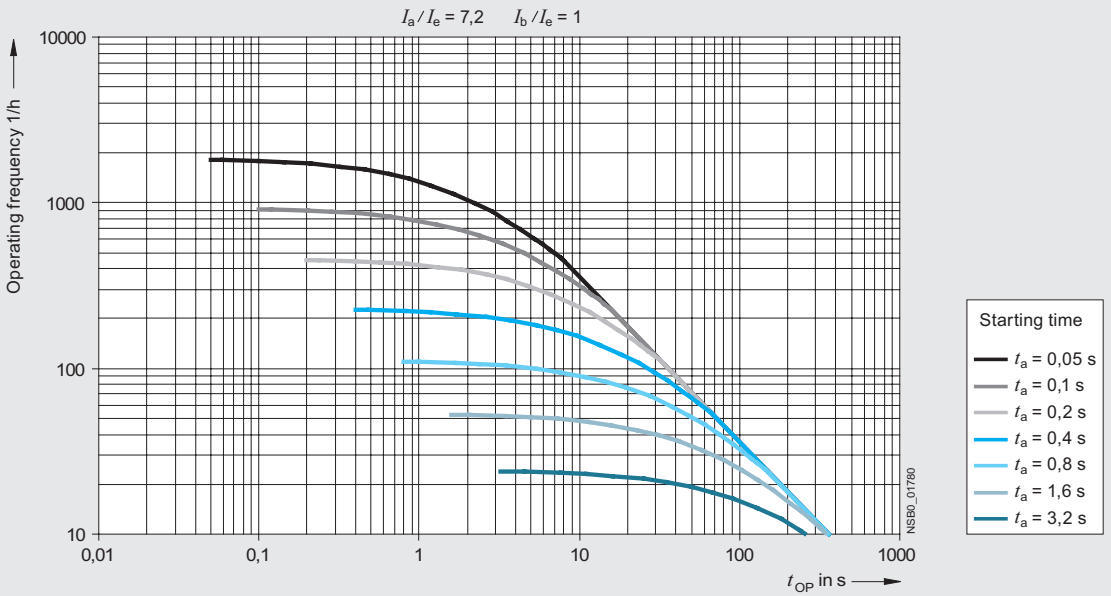
Type current 50 A (3RF24 50-.AC..)[1)]

I_{max} Thermal limit current for individual mounting
I_{max} Thermal limit current for side-by-side mounting
I_{IEC} Current acc. to IEC 947-4-3 for individual mounting
I_{IEC} Current acc. to IEC 947-4-3 for side-by-side mounting

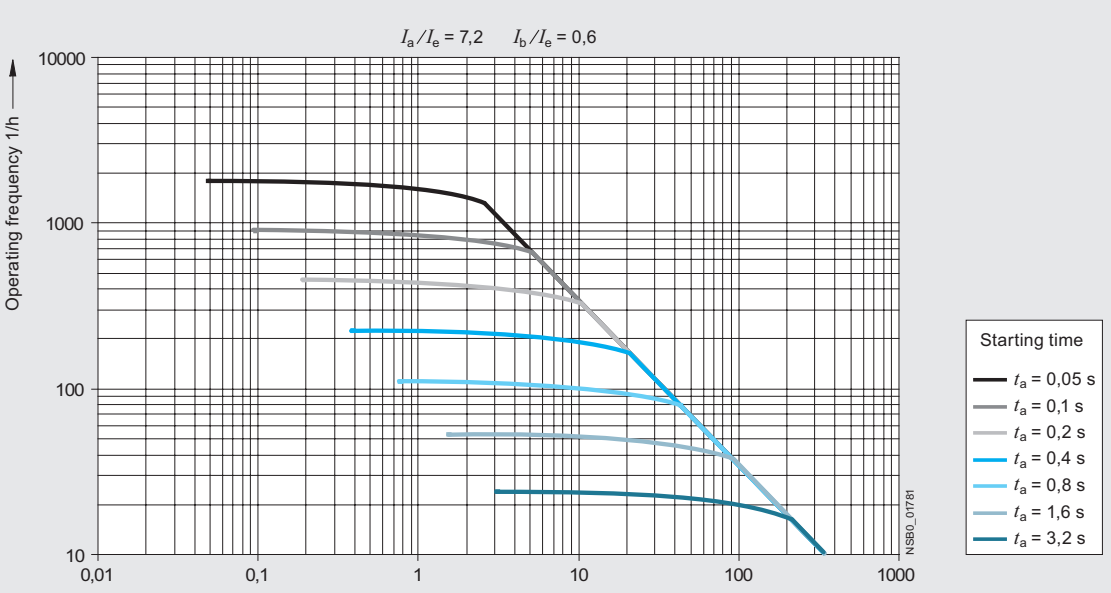
1) Identical current/temperature curves for stand-alone and side-by-side installation.

3RF24 solid-state contactors, 3-phase

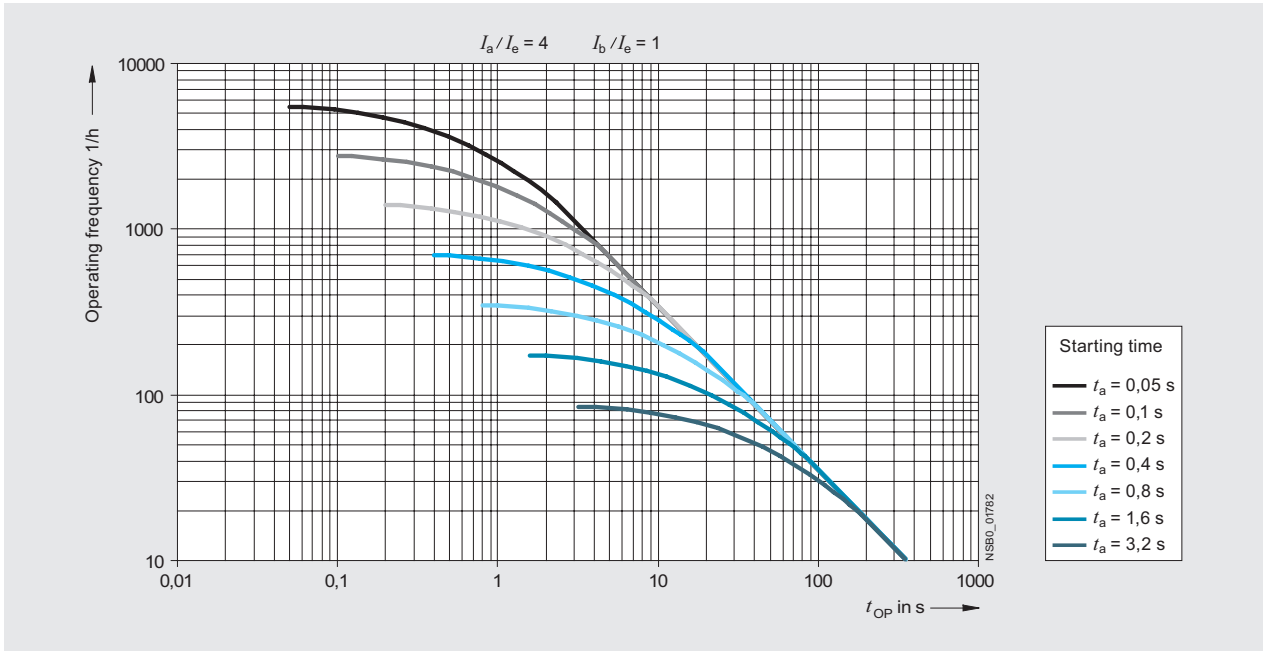
Maximum permissible switching frequency depending on the starting time t_a and the ON period t_{ED}



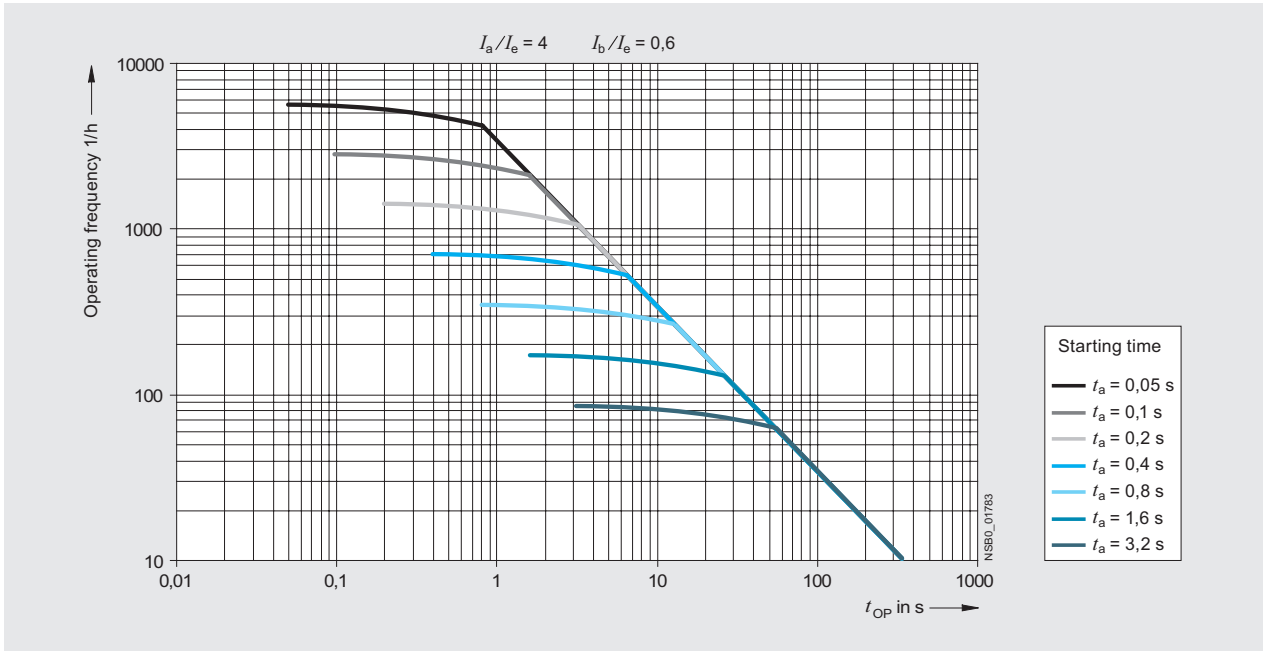
For motors with a starting current of 4- to 7.2 times the rated current and with a full load



For motors with a starting current of 4- to 7.2 times the rated current and with a 60 % load



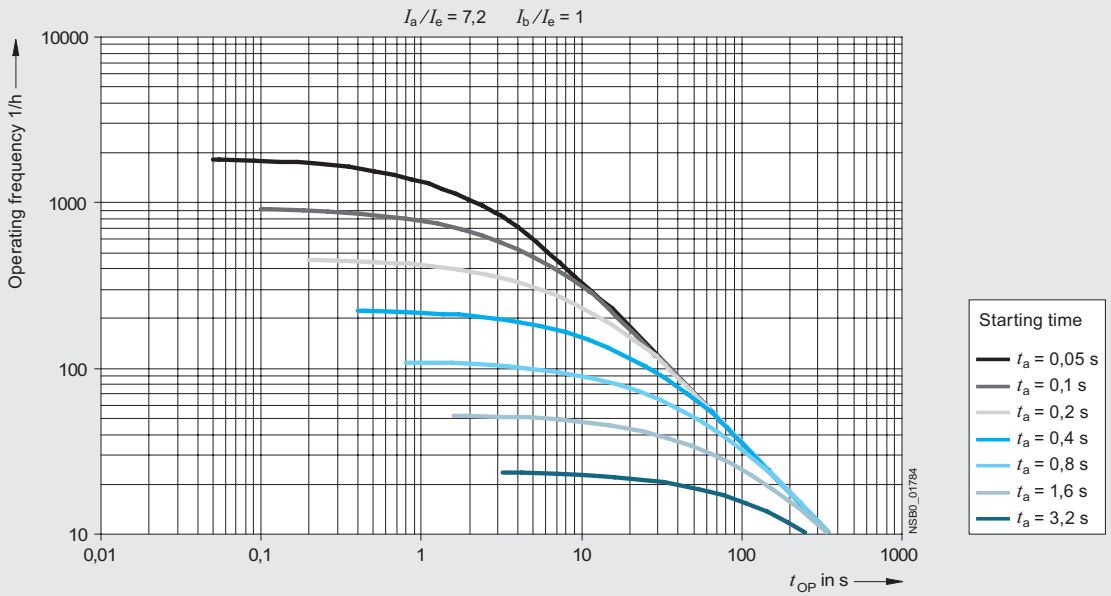
For motors with a starting current of up to 4 times the rated current and with a full load



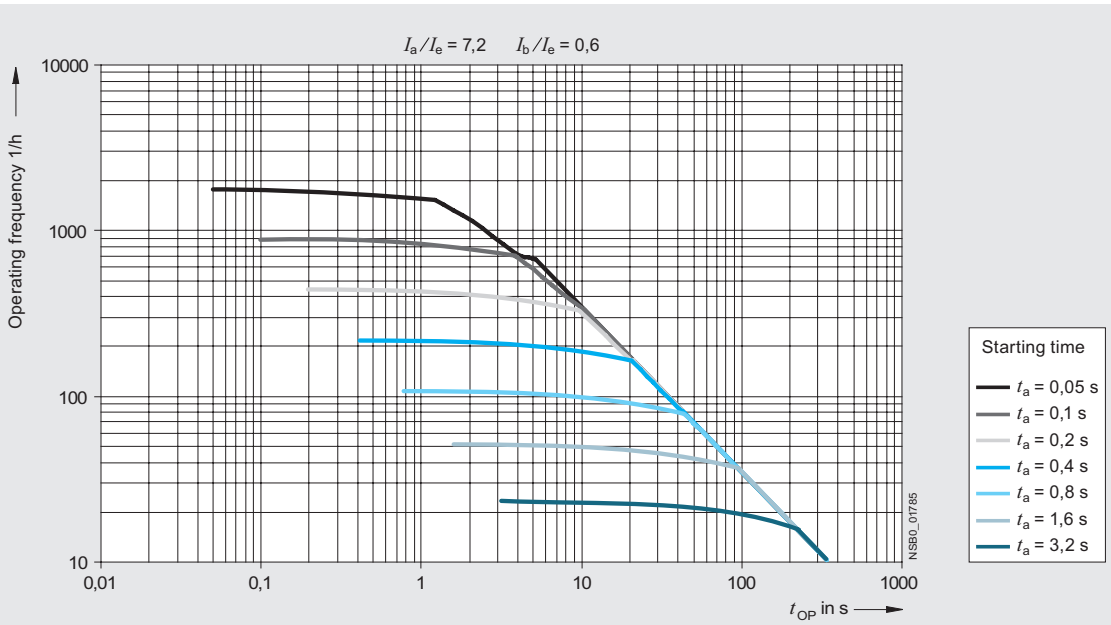
For motors with a starting current of up to 4 times the rated current and with a 60 % load

3RF24 solid-state reversing contactors, 3-phase

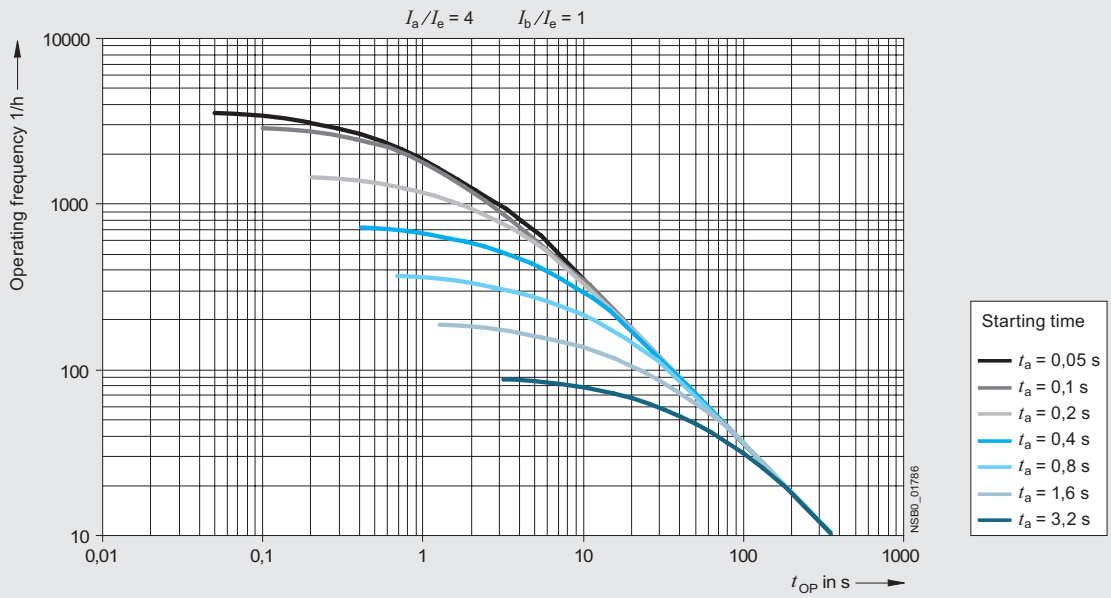
Maximum permissible switching frequency depending on the starting time t_a and the ON period t_{ED}



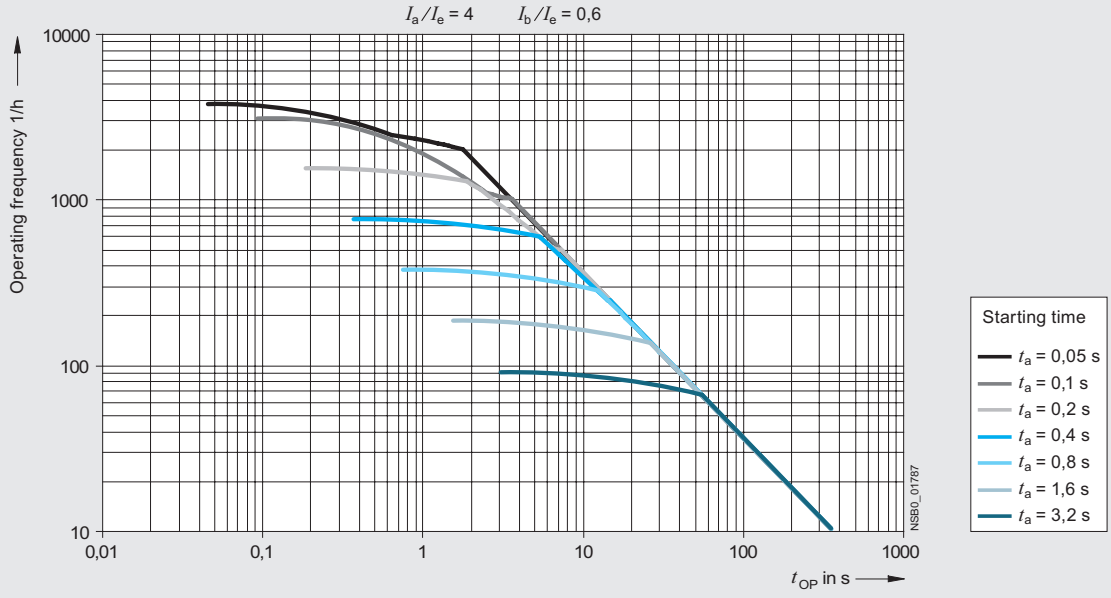
For motors with a starting current of 4- to 7.2 times the rated current and with a full load



For motors with a starting current of 4- to 7.2 times the rated current and with a 60 % load



For motors with a starting current of up to 4 times the rated current and with a full load



For motors with a starting current of up to 4 times the rated current and with a 60 % load