142_A / paragon - Smart Actuator

Anfrage Herr Sielhorst, 13-Sep-2018 Spezifikationsdokument siehe Projektordner

Test Nichibo - JD3FN-5025 (not selected, see below)

In [13]:

```
## Import MotorCalc module
from MotorCalc import*
import matplotlib.pyplot as plt
import numpy as np


## KATALOG Nichibo
U_N_KN = 9.6
I_S_KN = 47.75
M_S_KN = 1673*9.81E-5
I_0_KN = 1.4
motor_name_supplier = 'JD3FN-5025'
```

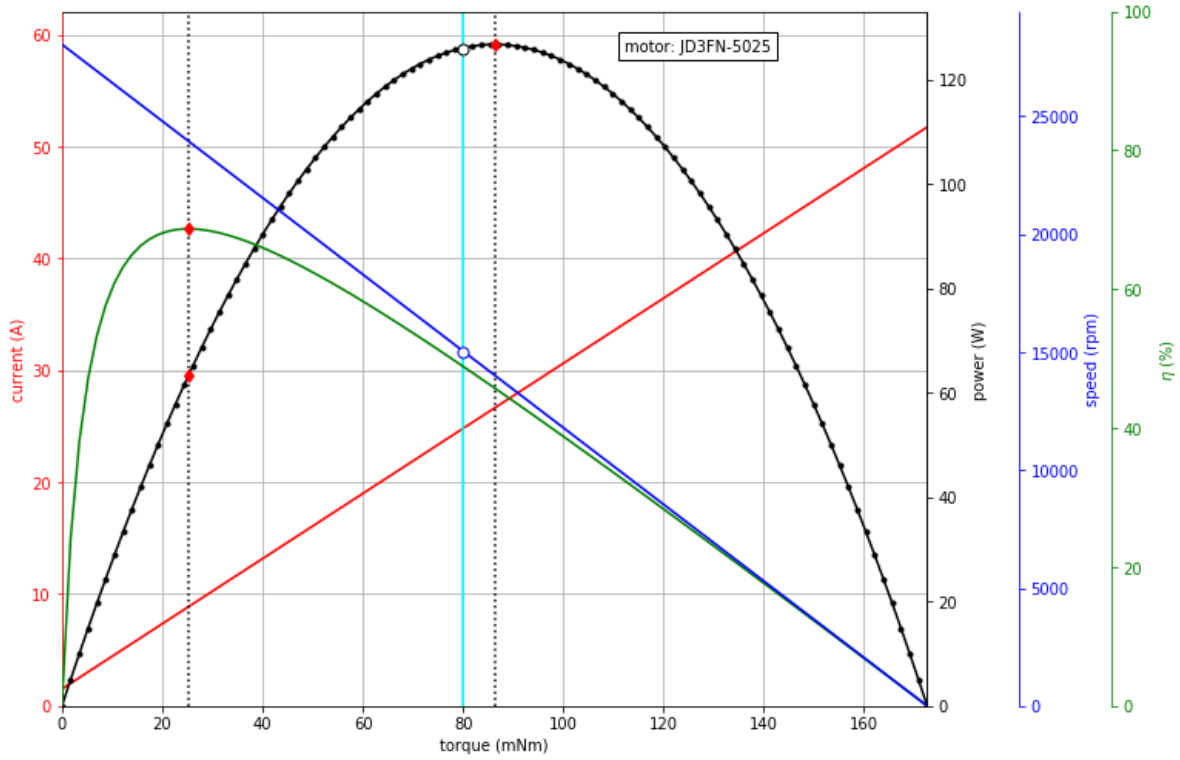
In [22]:

```
#Terminal resistance
R=U_N_KN / I_S_KN
#Operating voltage
U=10.4
#No load current
I_0 = I_0_KN / U_N_KN * U
#Torque konstant
k_M = M_S_KN / I_S_KN
#Torque @ working point
M_WP = 0.08
#Speed @ working point
n_WP = 15000
P_mech_des=M_WP*n_WP*np.pi/30


#Print values
print('R = {:0.2f} Ohm'.format(R))
print('U = {:0.2f} V'.format(U))
print('I_0 = {:0.2f} A'.format(I_0))
print('k_M = {:0.2f} mNm/A'.format(k_M*1000.0))
print('W_mech = {:0.2f} W'.format(P_mech_des))
```

```
R = 0.20 Ohm
U = 10.40 V
I_0 = 1.52 A
k_M = 3.44 mNm/A
W_mech = 125.66 W
```

In [23]:

```
m=CDCMotor(U_N=U,R=R,I_0=I_0,k_M=k_M, M_WP = M_WP, n_WP = n_WP, motor_name=motor_nar

m.plotCurves()
```



Test Nichibo - NC3SFN-7522 (Selection for quote)

In [35]:

```
## KATALOG Nichibo
U_N_KN = 12.0
I_S_KN = 81.60
M_S_KN = 4603*9.81E-5
I_0_KN = 1.4
motor_name_supplier = 'NC3SFN-7522'
motor_name_koco = 'C3865F3C-195-12.0-001'
```

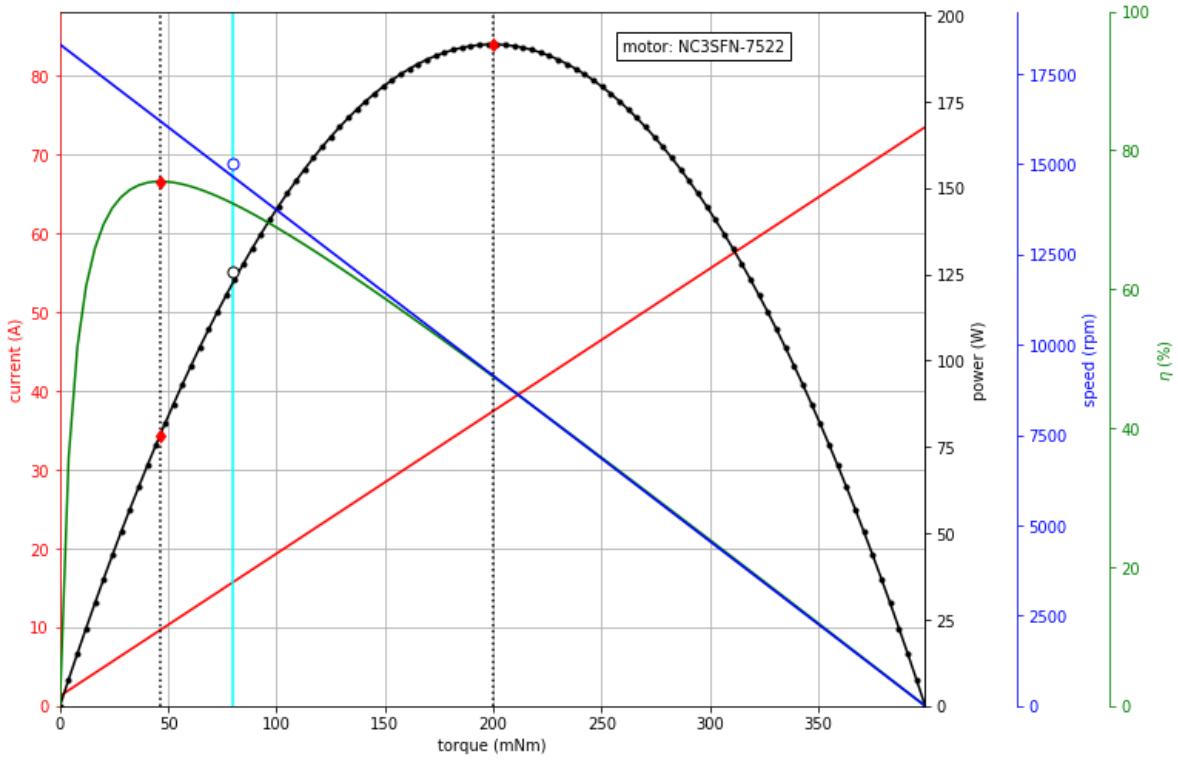
In [36]:

```
#Terminal resistance
R=U_N_KN / I_S_KN
#Operating voltage
U=10.8
#No load current
I_0 = I_0_KN / U_N_KN * U
#Torque konstant
k_M = M_S_KN / I_S_KN
#Torque @ working point
M_WP = 0.08
#Speed @ working point
n_WP = 15000
P_mech_des=M_WP*n_WP*np.pi/30


#Print values
print('R = {:0.2f} Ohm'.format(R))
print('U = {:0.2f} V'.format(U))
print('I_0 = {:0.2f} A'.format(I_0))
print('k_M = {:0.2f} mNm/A'.format(k_M*1000.0))
print('W_mech = {:0.2f} W'.format(P_mech_des))
```

```
R = 0.15 Ohm
U = 10.80 V
I_0 = 1.26 A
k_M = 5.53 mNm/A
W_mech = 125.66 W
```

In [37]:

```
m=CDCMotor(U_N=U,R=R,I_0=I_0,k_M=k_M, M_WP = M_WP, n_WP = n_WP, motor_name=motor_nar

m.plotCurves()
```



Derive temperature drift

In [ ]:

```
##
```