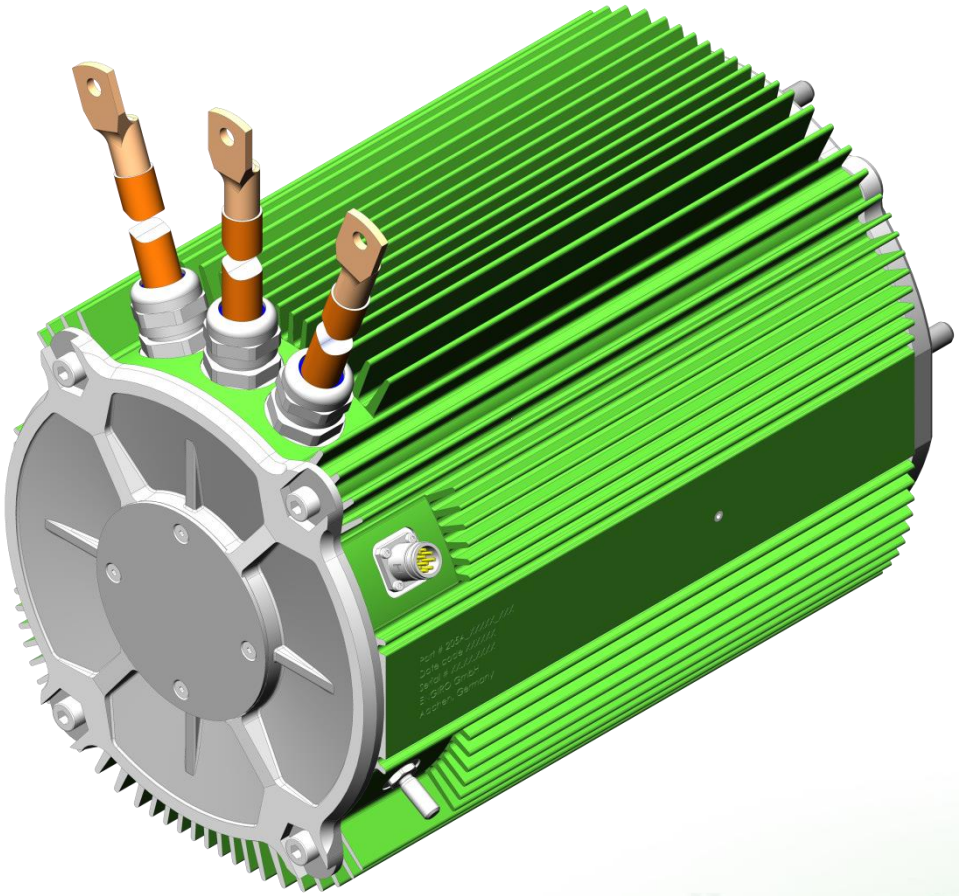
# 205A-12010-ABC

air-cooled motor / generator with up to 28 kW continuous power



## KEY FEATURES

- permanent magnet synchronous machine
- air-cooled
- high peak power for motor applications
- convincing cost-benefit ratio
- recommended voltage range from 48V to 200V
- delivery with controller possible

ENGIRO GmbH · Avantisallee 51 · 52072 Aachen · Germany
Tel. +49 (0)241 99798-0 · E-Mail: engineering@engiro.de · www.engiro.com

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# Technical Data
# Machine

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| Nominal Operation (S1, cooling as specified below) | | | | | | |
|---|---|---|---|---|---|---|
| Torque | $T_{nom}$ | | | | 81 | Nm |
| Power | $P_{nom}$ | | | | 28 | kW |
| Speed | $n_{nom}$ | | | | 3250 | rpm |
| Phase rms-current | $I_{nom}$ | | | | 300[1,2)] | A |
| Battery voltage (DC) | $U_{nom}$ | | | | 96 | V |
| Electric frequency | $f_{el,nom}$ | | | | 216 | Hz |
| Power factor | cos(φ) | | | | 0.75 | |
| **Maximal Values (S2, 10s, cooling as specified below)** | | | | | | |
| Torque | $T_{max}$ | | | | 295 | Nm |
| Power | $P_{max}$ | | | | 70 | kW |
| Phase rms-current | $I_{max}$ | | | | 1250[2)] | A |
| Battery voltage (DC) | $U_{max}$ | | | | 200 | V |
| Speed | $n_{max}$ | | | | 8000 | rpm |
| Electric frequency | $f_{el,\ max}$ | | | | 533 | Hz |
| **Electrical Data** | | | | | | |
| Number of phases | | | | | 3 | |
| Number of pole pairs | | | | | 4 | |
| Maximal efficiency | | | | | 96 | % |
| *T/I* constant (I<$I_{nom}$) | | | | | 0.27 | $Nm/A_{rms}$ |
| *U/n* constant (AC) at a temperature of 30°C | | rms: | 17.1 | peak: | 29.1 | V/(1000rpm) |
| $K_e$ constant (AC) at a temperature of 30°C | | rms: | 0.041 | peak: | 0.069 | $V/(rad*s^{-1})$ |
| **Additional Data** | | | | | | |
| Rotor moment of inertia | | | | | 0.021 | $kg*m^2$ |
| Protection category | | | | | IP6K9K[3)] | |
| Maximal motor temperature | | | | | 120 | °C |
| Allowed ambient temperature | | | | | -20 … 45[4)] | °C |
| Cooling (medium, flow rate, inlet temperature, pressure) | | | | | air, > 12 m/s, ≤ 25°C | |
| Temperature monitoring | | | | | 1 x KTY84-130 | |
| Type approval | | | | | CE, EN 60034 | |
| Customs tariff number | | | | | 8501 5230 | |
| **Connectors** | | | | | | |
| Power terminals | | | | | 3 x 50mm² cables with M8 cable lugs | |
| Weight power cables | | | | | 3.3 | kg |
| Length power cables | | | | | 2 | m |
| Signal connectors | | | | | M16, 10 Pin | |

[1)] Nominal current strongly dependent on cooling as specified below. / [2)] The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition. / 3) Please note that the IP6K9K rating is only valid if the machine is installed with suitable cable glands and an appropriate sealed interface at the drive side of the motor (flange and/or shaft). Please contact ENGIRO for further questions. / 4) other range on request





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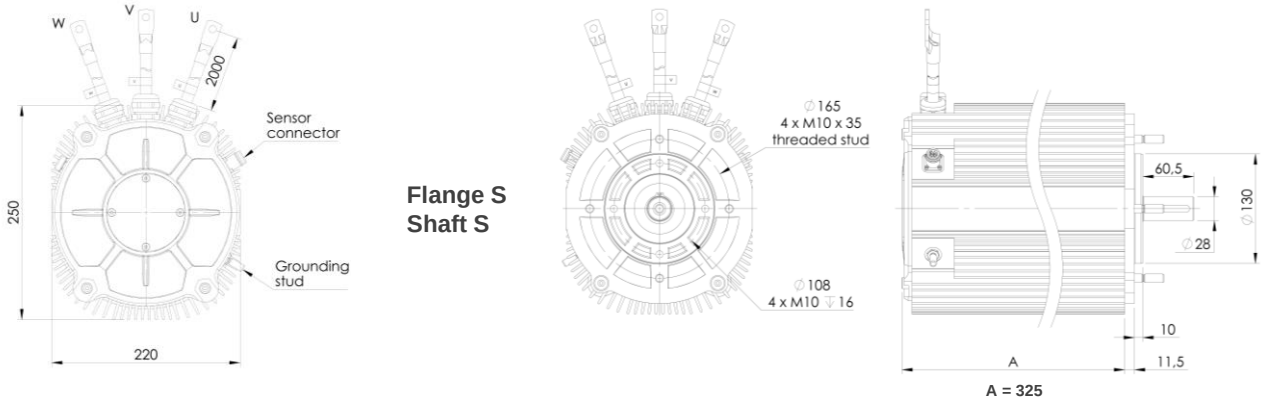
# Available Type Variants

| Shaft and Flange Combinations for 205A-12010-ABC | | Flange (A) | |
|---|---|---|---|
| | | **S** (Standard) | **H** (Hydraulic Pump Ø101,6mm) |
| **Shaft (B)** | **S** (Ø28mm shaft with keyway) | ● (~43 kg) | |
| | **G** (Internal splined shaft) | | ● (~37 kg) |
| **Position Sensor (C)** | | E: Sin/cos encoder | |

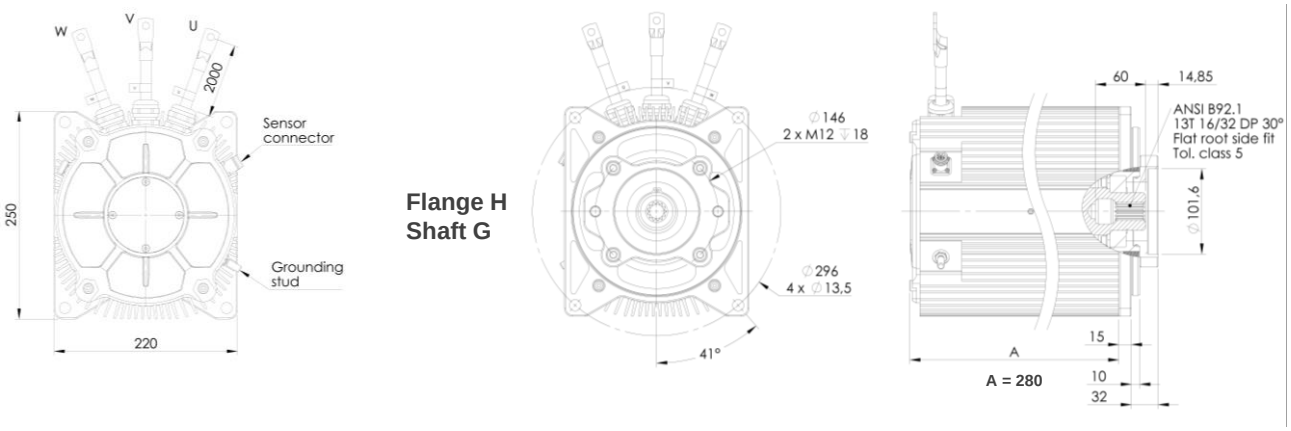
Other individual combinations are also possible on request.

## Technical Drawings

**Flange S**
**Shaft S**




**Flange H**
**Shaft G**





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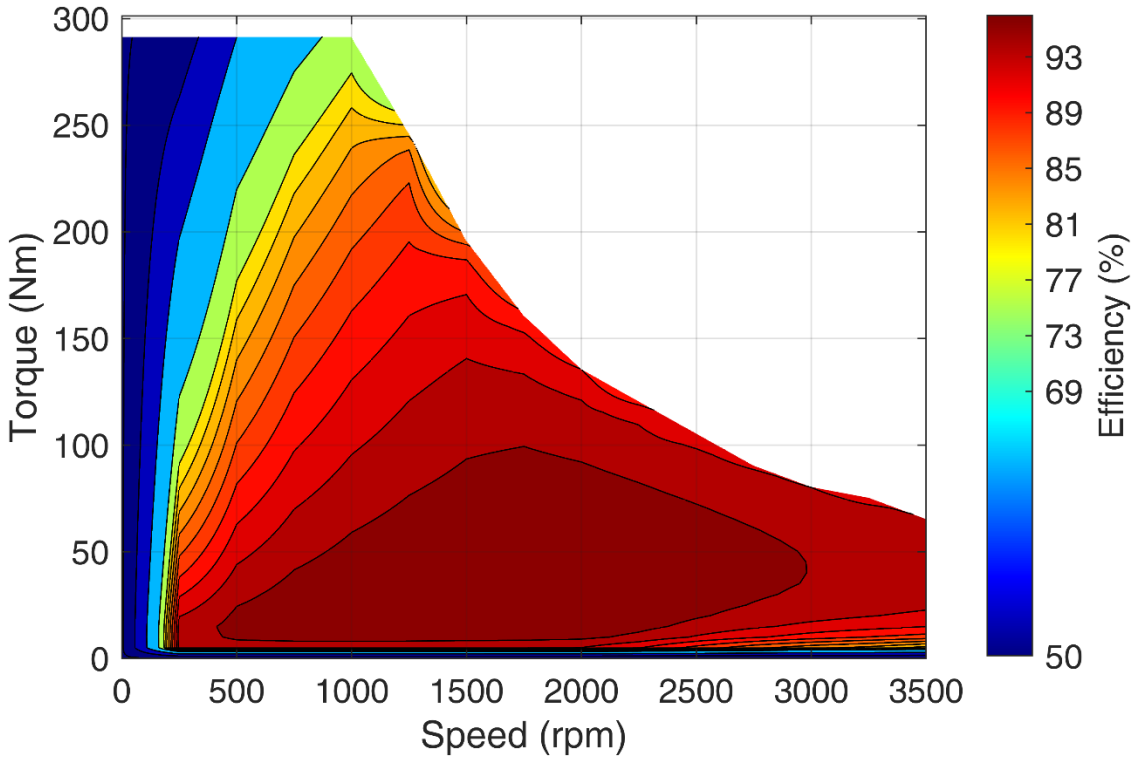
## Simulated Efficiency of Motor Application

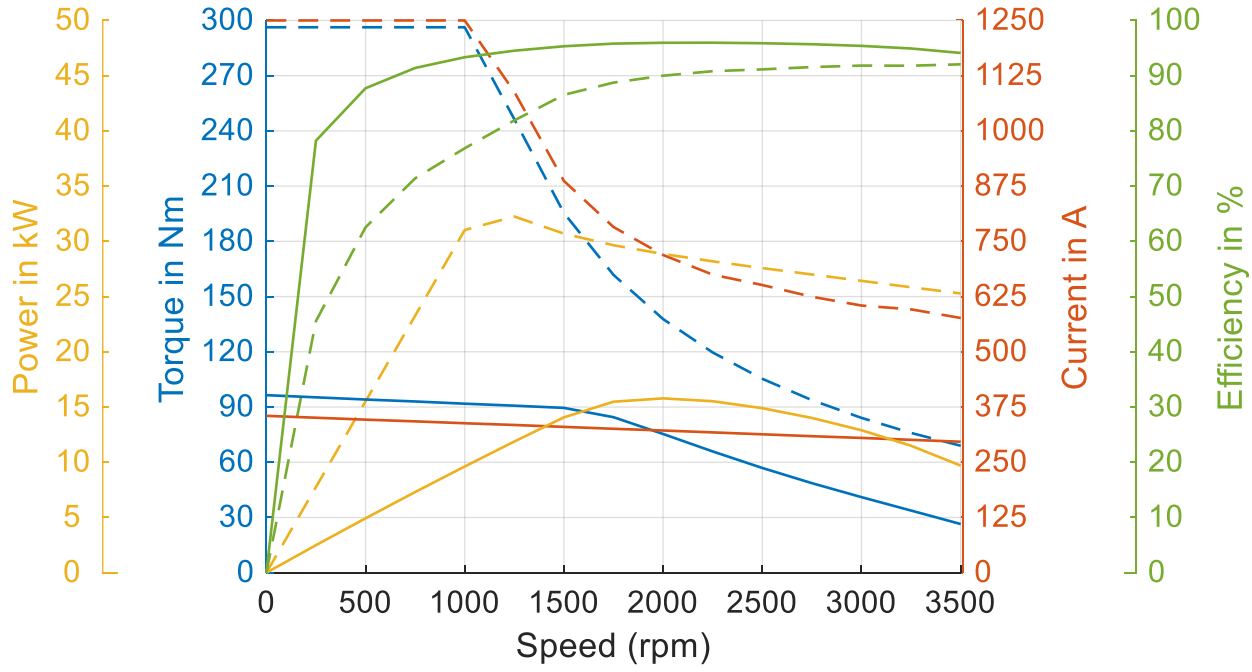
(electric machine only; $U_{nom}$ = 48 V; machine at 140 °C;)




## Simulated Characteristic Motor Parameters

$U_{nom}$ = 48 V

solid lines: continuous; dashed lines: maximum;





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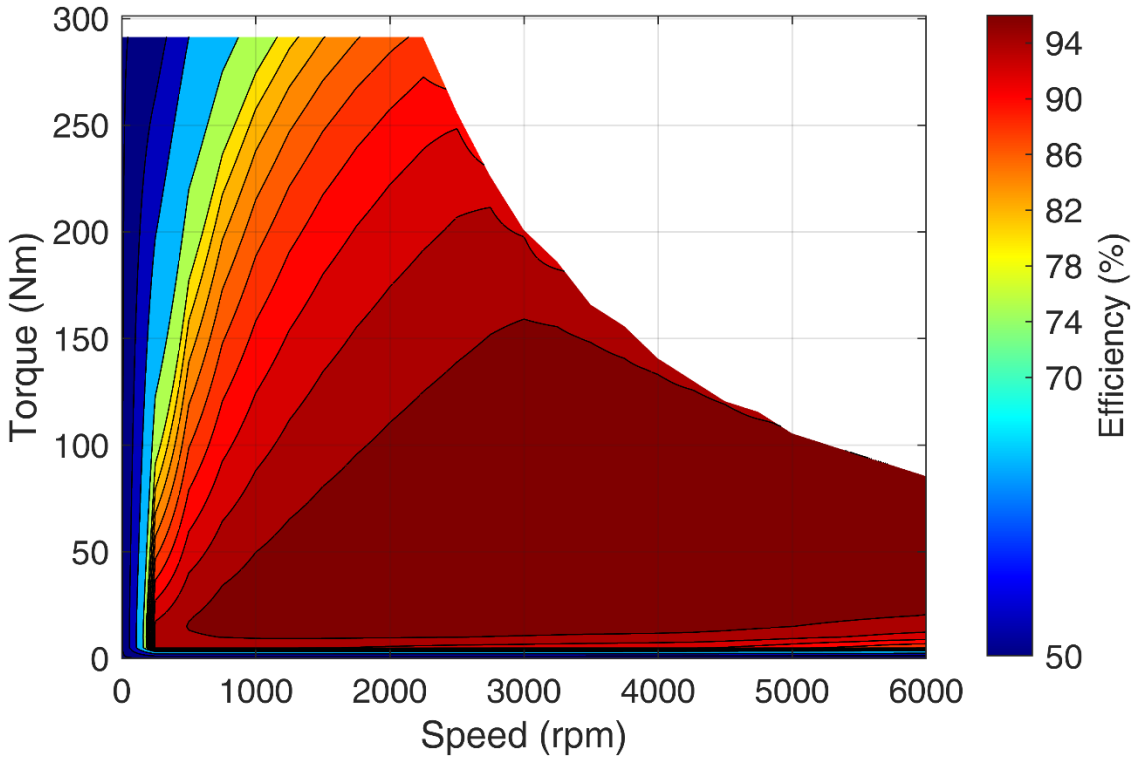
## Simulated Efficiency of Motor Application

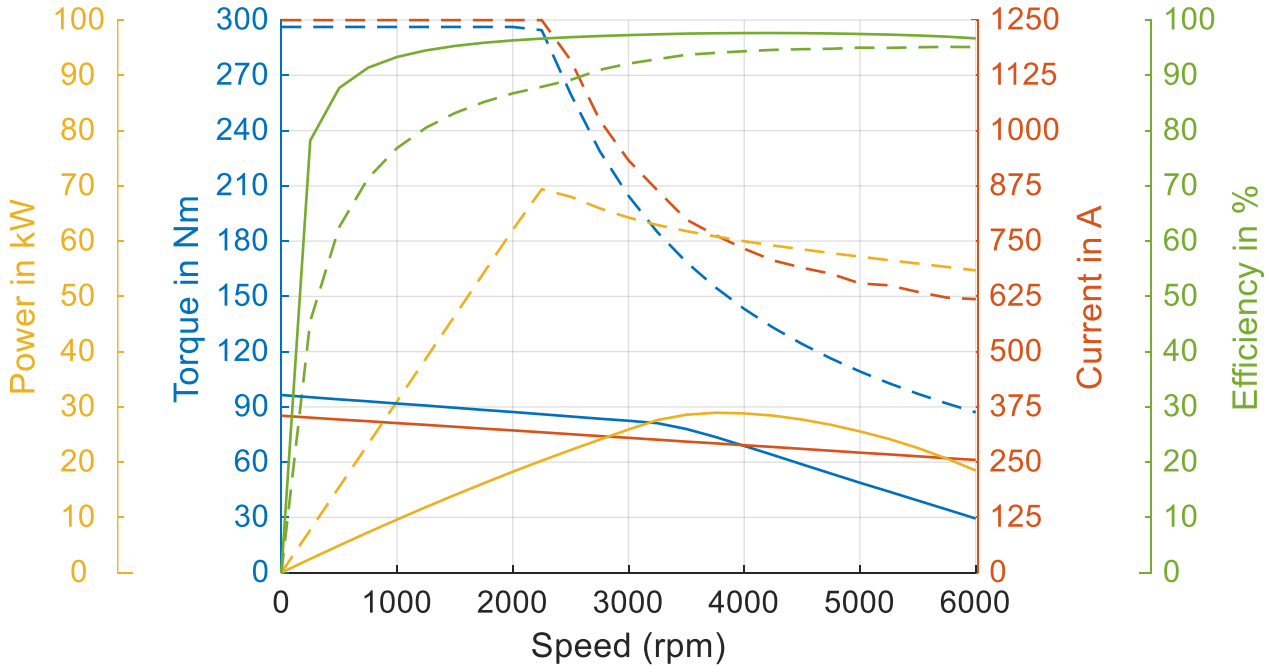
(electric machine only; $U_{nom}$ = 96 V; machine at 140 °C;)




## Simulated Characteristic Motor Parameters

$U_{nom}$ = 96 V

solid lines: continuous; dashed lines: maximum;





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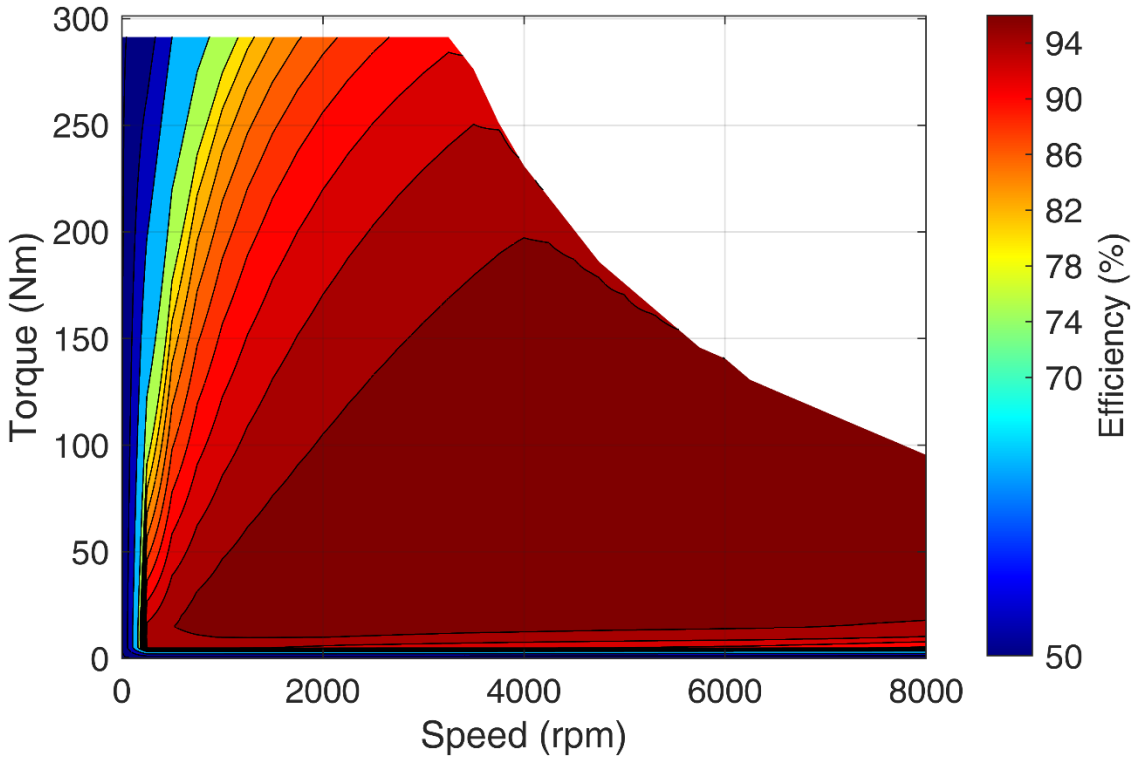
## Simulated Efficiency of Motor Application

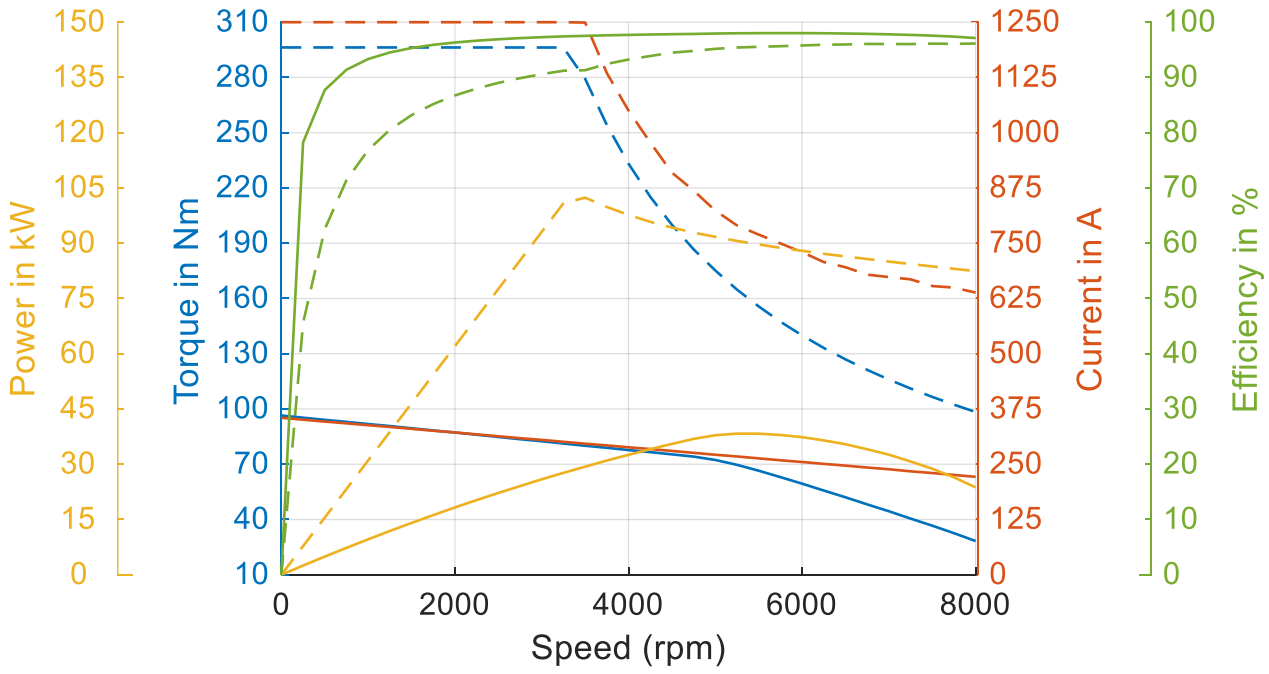
(electric machine only; $U_{nom}$ = 140 V; machine at 140 °C;)




## Simulated Characteristic Motor Parameters

$U_{nom}$ = 140 V

solid lines: continuous; dashed lines: maximum;





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