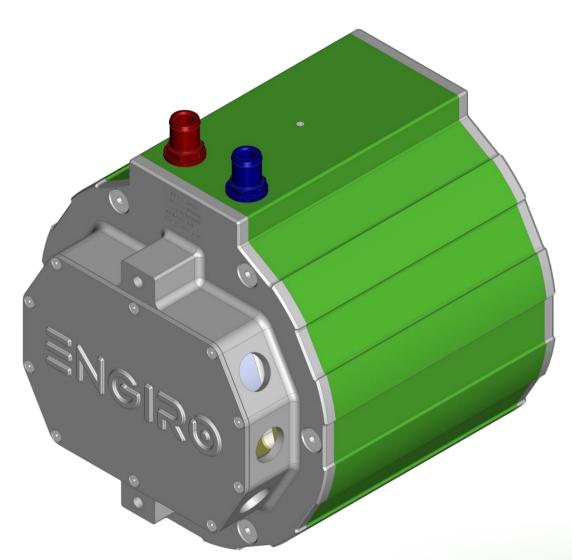


# 205W-08020-ABC

water-cooled motor / generator with up to 26 kW continuous power



### **KEY FEATURES**

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

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Hc

Version: 010

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### 205W-08020-ABC

# Technical Data Machine **ENGIRO**



Prover Power Power Power Power Power Power Power Power Power Prove Power Power Prove Power Power Prove Power Power Prove Power Power Prove Power Power Power Prove Power Powe		Nominal Operation (S <sup>2</sup>	1, cooling as spe	ecified	below)				
Speednon nonI I II I I II I I I II <b< td=""><td>Torque</td><td>T<sub>nom</sub></td><td></td><td>89</td><td></td><td>82</td><td>Nm</td></b<>	Torque	T <sub>nom</sub>		89		82	Nm		
Pase ms-currentImmI	Power	P <sub>nom</sub>		9.8		26	kW		
mean <th colspan="2" mean<<="" td=""><td>Speed</td><td>n<sub>nom</sub></td><td></td><td>1050</td><td></td><td>3100</td><td>rpm</td></th>	<td>Speed</td> <td>n<sub>nom</sub></td> <td></td> <td>1050</td> <td></td> <td>3100</td> <td>rpm</td>		Speed	n <sub>nom</sub>		1050		3100	rpm
Lettic frequency     Maximal Values (S2, 10s, cos(φ)     70     207     Hz       Power factor     cos(φ)     0.72     0.69     Hz       Torque     Maximal Values (S2, 10s, costing as specified below)     Maximal Values (S2, 10s, costing as specified below)     Nm       Torque     //max     188     188     Nm       Power     //max     6253     -200     V       Battery voltage (DC)     //max     6253     V     500       Speed     //max     6253     V     500       Speed     //max     6253     V     500       Number of phases     //max     0     V     70       Number of phases      //max     0     Nm/Ama       7/ constant (4C) at a temperature of 30°C     rms:     0.058     peak:     0.090       V/(roordrsn')       ////////////////////////////////////	Phase rms-current	I <sub>nom</sub>		254 <sup>1,2)</sup>		237 <sup>1,2)</sup>	А		
Number of pole pairsCos(q)0.720.69Maximal Values (S2, 10s, could as specified blow)TorqueTmax188188NmPower $P_{max}$ 188188NmPower $P_{max}$ 625°625°ABattery voltage (DC) $U_{max}$ 625°7070Battery voltage (DC) $U_{max}$ 625°7070Electric frequency $f_{ef, max}$ 625°7070Battery voltage (DC) $U_{max}$ 625°7070Battery voltage (DC) $U_{max}$ 625°7070Electric frequency $f_{ef, max}$ 625°7070Speed $n_{max}$ 707070Number of pole pairs8Number of pole pairs588Nm/AmeNumber of pole pairs9%Number of pole pairs9%Num	Battery voltage (DC)			48		140	V		
Maximal Values (S2, 10s, co-ling as specified below)Torque $T_{max}$ 188188NmPower $P_{max}$ 148188NmPower $P_{max}$ 6253	Electric frequency	f <sub>el,nom</sub>		70		207	Hz		
TorqueTmax188Im188NmPowerPmax14Imax14Imax <td< td=""><td>Power factor</td><td><math>\cos(\phi)</math></td><td></td><td>0.72</td><td></td><td>0.69</td><td></td></td<>	Power factor	$\cos(\phi)$		0.72		0.69			
Proce PowerProce ProceProce Pro	Ν	Aaximal Values (S2, 10	s, cooling as sp	ecified	d below)				
Mase ms-currentMase Mase ms- terms-furge (DC)Mase ms- funceElectricElectricMase ms- funceMase ms	Torque	$T_{\max}$		188		188	Nm		
mmMmMark $\bigvee max$ $\checkmark = 0.000$ Speed $n_{max}$ $0.0000$ Electric I prevention $0.0000$ Electric I DataElectric I DataNumber of plasesJet maxJet maxNumber of plasesSet maxSet maxSet maxNumber of pole pairsSet maxSet ma	Power	P <sub>max</sub>		14		44	kW		
max     max     8000     rpm       Speed     nmax     8000     rpm       Electric frequency     fet max     8000     rpm       Electric frequency     fet max     8000     rpm       Electric frequency     fet max     8000     rpm       Bedrive frequency     fet max     8000     rpm       Bedrive frequency     8000     rpm       Bedrive frequency     8000     rpm       Number of phases     8000     rpm       Number of pole pairs     9000     9000       Maximal efficiency     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     9000     90000     9000     9000     90000     90000     90000     90000     90000     90000     90000     90000     90000     90000     900000     900000     90000     900000     9000000     9000000     900	Phase rms-current	I <sub>max</sub>		625 <sup>2)</sup> 625 <sup>2)</sup>		625 <sup>2)</sup>	А		
Felectric requency   f <sub>at max</sub> G   Second secon	Battery voltage (DC)	U <sub>max</sub>		200		$\vee$			
Electrical Data       Electrical Data       Number of phases     3       Number of pole pairs	Speed	n <sub>max</sub>		8000			rpm		
Number of phases $\begin{timescapediates}{10pt} \metabol{linear}{10pt} \metabol{linear}{1$	Electric frequency	f <sub>el, max</sub>		533			Hz		
Number of pole pairs $( = 1 + 1)^{1/2} + 1 + 1 + 1)^{1/2} + 1 + 1 + 1)^{1/2} + 1 + 1)^{1/2} + 1)$		Elec	ctrical Data						
Maximal efficiency $\begin{titeded} \mathbb{{C}}\end{titeded} \mathbb{{C}}\end{titeded} \mathbb{{C}}\end{titeded} \mathbf{{C}}\end{titeded} {$	Number of phases					3			
T/l constant (l <i_nom)< th=""><math>Mm/A_ms</math><math>Mm/A_ms</math>U/n constant (AC) at a temperature of 30°Crms:<math>24.4</math>peak:<math>41.5</math><math>V(1000 pm</math><math>K_c</math> constant (AC) at a temperature of 30°Crms:<math>0.58</math>peak:<math>0.099</math><math>V(rad*s^-1)</math>Addition-I DataWeight (w/o cables)See page 4(mm moment of inertiaRotor moment of inertia<math>0.0128</math><math>Kg*m^2</math>Protection categoryIP6K9K3(CAllowed ambient temperature<math>-20454</math><math>C</math>Cooling (medium, flow rate, inlet temperature, pressure)water/g/tsubs/</i_nom)<>	Number of pole pairs			4					
U/n constant (AC) at a temperature of 30°C   rms:   24.4   peak:   41.5   V/(1000 pm     K <sub>c</sub> constant (AC) at a temperature of 30°C   rms:   0.058   peak:   0.099   V/(rad's-1)     Additional Data     Weight (w/o cables)   See page 4   (main see page 4)   (m	Maximal efficiency			96			%		
Kg constant (AC) at a temperature of 30°C     rms:     0.058     peak:     0.099     V/(rad*s-1)       Additional Data     Additional Data     see page 4     0.0123     kg*m²       Weight (W/o cables)     QUITE     See page 4     QUITE     QUITE     QUITE     QUITE     QUITE     QUITE     Kg*m²       Rotor moment of inertia     QUITE     See page 4     QUITE	T/I constant (I <i<sub>nom)</i<sub>			0.36			Nm/A <sub>rms</sub>		
Additional DataWeight (w/o cables)see page 4Rotor moment of inertia0.0123Rotor moment of inertia0.0123Protection categoryIP6K9K3Maximal motor temperature140CAllowed ambient temperature-20 45°Cooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barTemperature monitoring1 x KTY84-130Type approvalCE, EN 60034Customs tariff number8501 5230ConnectorsPower terminals3 x M25 cable glandSignal connectorsM16, 10 Pin	U/n constant (AC) at a temperature of 30°C		rms:	24.4	peak:	41.5	V/(1000rpm		
Weight (w/o cables)see page 4Rotor moment of inertia(main and the see page 4)Rotor moment of inertia(main and the see page 4)Protection categoryIP6K9K3)Maximal motor temperatureIP6K9K3)Maximal motor temperature°CAllowed ambient temperature(main and the see page 4)Cooling (medium, flow rate, inlet temperature, pressure)(water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barTemperature monitoring(main and the see page 4)Type approvalCE, EN 60034Customs tariff number(main and the see page 4)Power terminals(main and the see page 4)Signal connectors(main and the see page 4)	$K_{\rm e}$ constant (AC) at a temperature of 30°C		rms:	0.058	peak:	0.099	V/(rad*s-1)		
Rotor moment of inertia0.0123kg*m2Protection categoryIP6K9K3IP6K9K3Maximal motor temperature140°CAllowed ambient temperature-20 454°CCooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barTemperature monitoring1 x KTY84-130Type approvalCE, EN 60034Customs tariff number8501 5230Power terminals3 x M25 cable glandSignal connectorsM16, 10 Pin		Add	itional Data						
Protection categoryIP6K9K3Maximal motor temperature140°CAllowed ambient temperature*C*CCooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 bar*CTemperature monitoring1 x KTY84-130*CType approvalCE, EN 60034*CCustoms tariff number8501 5230*CPower terminals3 x M25 cable gland*CSignal connectorsM16, 10 Pin*C	Weight (w/o cables)		see page 4						
Maximal motor temperature140°CAllowed ambient temperature-20 454°CCooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barTemperature monitoring1 x KTY84-130Type approvalCE, EN 60034Customs tariff number8501 5230ConnectorsPower terminals3 x M25 cable glandSignal connectorsM16, 10 Pin	Rotor moment of inertia			0.0123			kg*m²		
Allowed ambient temperature-20 454°CCooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barITemperature monitoring1 x KTY84-130IType approvalCE, EN 60034ICustoms tariff number8501 5230IConnectorsPower terminals3 x M25 cable glandSignal connectorsM16, 10 Pin	Protection category			IP6K9K <sup>3)</sup>					
Cooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 barTemperature monitoring1 x KTY84-130Type approvalCE, EN 60034Customs tariff number8501 5230ConnectorsPower terminals3 x M25 cable glandSignal connectorsM16, 10 Pin	Maximal motor temperature			140			°C		
Temperature monitoring1 x KTY84-130Type approvalCE, EN 60034Customs tariff number8501 5230ConnectorsPower terminalsSignal connectorsM16, 10 Pin	Allowed ambient temperature			-20 454)		°C			
Type approval CE, EN 60034   Customs tariff number 8501 5230   Connectors   Power terminals 3 x M25 cable gland   Signal connectors M16, 10 Pin			water/gly	water/glycol 50/50, 8 l/min, $\leq$ 45°C, $\leq$ 0.5 bar					
Customs tariff number 8501 5230   Connectors   Power terminals 3 x M25 cable gland   Signal connectors M16, 10 Pin	Femperature monitoring			1 x KTY84-130					
Connectors   Power terminals 3 x M25 cable gland   Signal connectors M16, 10 Pin	rpe approval CE, EN 600		CE, EN 60034						
Power terminals3 x M25 cable glandSignal connectorsM16, 10 Pin	Customs tariff number			8501 5230					
Signal connectors M16, 10 Pin		Co	onnectors						
	Power terminals			3 x M25 cable gland					
Cooling connectors 2 x 3/4" / 19 mm	Signal connectors			M16, 10 Pin					
	Cooling connectors 2 x 3/4" / 19			x ¾" / 19 mm					

<sup>1)</sup> Nominal current strongly dependent on cooling as specified below.

<sup>2)</sup> The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.

<sup>3)</sup> 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.

<sup>4)</sup> other range on request

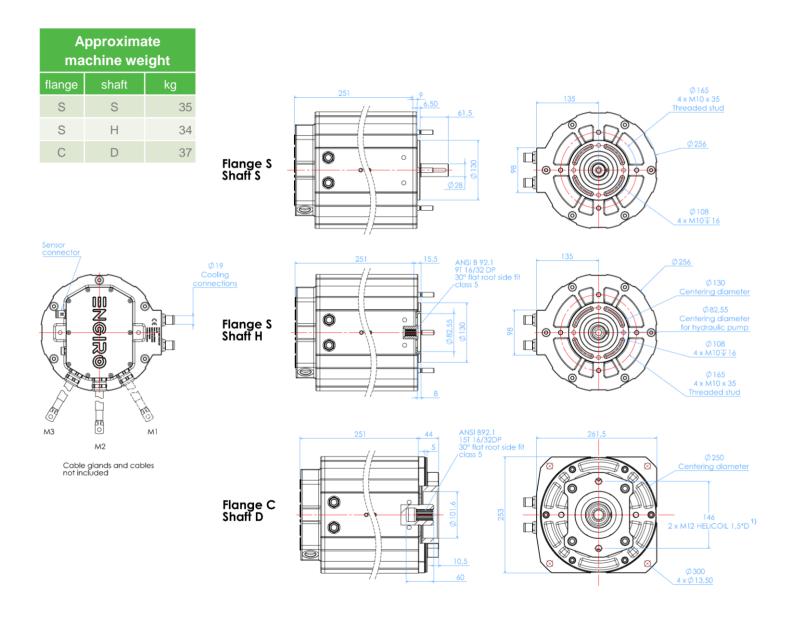
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### 205W-08020-ABC

# **Technical Drawings**



Available Type Variants						
type number	A: flange	B: shaft	C: position sensor			
	S: standard	S: cylindrical shaft with keyway Ø28mm	E: sin/cos encoder			
205W-08020-	C: flange for fan without insert	H: hollow shaft with internal splines ANSI B 92.1				
		D: hollow shaft with internal splines ANSI B 92.1				



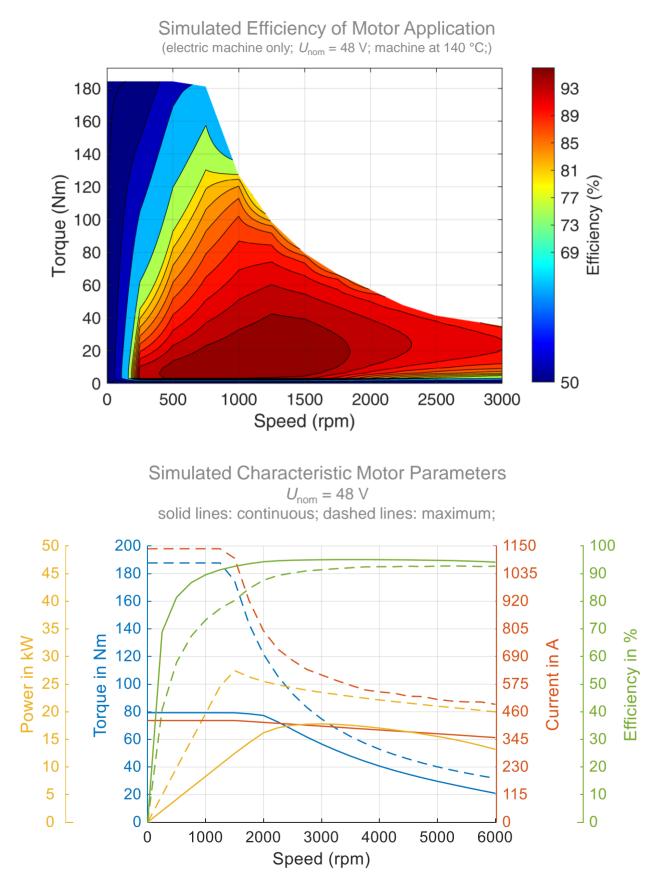
<sup>1)</sup> Machines with C-Flange and a revision number smaller than Rev15 have an M14 Helicoil 1,5\*D. Revision number is printed on each machine on the rear flange below the water-cooling hose barbs.

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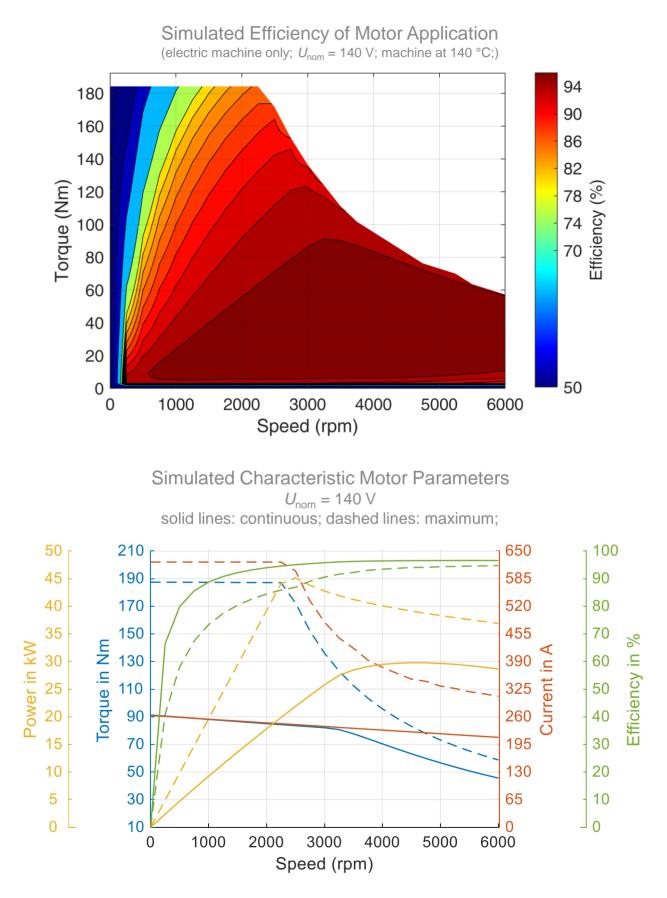




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