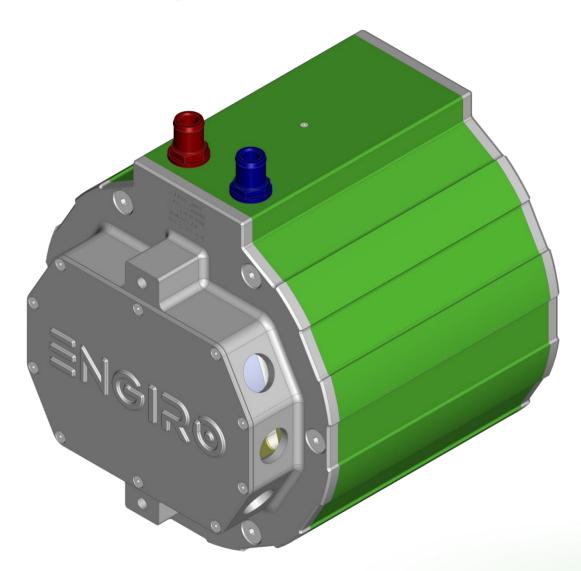


205W-08016-ABC

water-cooled motor / generator with up to 23 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

Hc

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Technical Data Machine



Press		Nominal Operation (S	S1, cooling as s _l	pecified belo	w)			
Speed	Torque	T_{nom}		81		76	Nm	
Phase rms-current	Power	P_{nom}		12		23	kW	
Sattery voltage (DC)	Speed	n_{nom}		1320		2660	rpm	
Factoric frequency Factor	Phase rms-current	I _{nom}		2951,2)		3791,2)	А	
Power factor Power factor Power factor Power	Battery voltage (DC)	U_{nom}		48 96			V	
Power factor Cos(φ) Co.72 Co.69 Co.72 Co	Electric frequency	$f_{el,nom}$		88		177	Hz	
Forque T_max 188 188 188 Mm Mm Power P_max 18 38 Mm Mm Power P_max 18 38 Mm Mm Mm Mm Mm Mm Mm M	Power factor			0.72		0.69		
Parax 18 38 38 38 38 38 38 38	Maximal Values (S2, 10s, cooling as specified below)							
### Phase rms-current	Torque	T_{max}		188		188	Nm	
Speed Description Descri	Power	P_{max}		18		38	kW	
Speed n _{max} 6950 Hz rmm Electric frequency f _{et max} 463 Hz Hz Electrical Data Number of phases 3 Number of pole pairs 4 Maximal efficiency 96 % % 77/ constant (I <n<sub>max) 0.29 Nm/A_{max} Nm/A_{max} V// no constant (AC) at a temperature of 30°C rms: 19.5 peak: 33.2 V// (nod *stant (AC) at a temperature of 30°C rms: 0.047 peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C rms: 0.047 peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C rms: 0.047 peak: 0.047 peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C rms: 0.047 peak: 0.047 peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of pole peak: 0.079 V// (rad *stant (AC) at a temperature of 30°C Number of peak: 0.047 V// (rad *stant (AC) at a temperat</n<sub>	Phase rms-current	I _{max}		7801,2)		7801,2)	А	
Flectrical Data Flectrica	Battery voltage (DC)	U_{max}				200	V	
Section Data Section Data Section Data Section Data Section Data Section Data Data Section Data	Speed	n_{max}		6950 rpn				
Number of phases Number of pole pairs Number of pairs Num/A _{mas}	Electric frequency	f _{el, max}		463			Hz	
Number of pole pairs 4 Maximal efficiency 96 % Maximal (AC) at a temperature of 30°C rms: 19.5 peak: 33.2 V/(1000 peak: 0.079 V/(rad*s) peak: 0.079 V		Ele	ectrical Data					
Maximal efficiency 96 % Til constant ($ \cdot _{n_0m}$) 0.29 Nm/A _{ms} Un constant ($ \cdot _{n_0m}$) 0.29 Nm/A _{ms} Un constant ($ \cdot _{n_0m}$) peak: 33.2 V/(1000 K ₆ constant (AC) at a temperature of 30°C rms: 0.047 peak: 0.079 V/(rad*s) Additional Data Weight (w/o cables) see page 4 Rotor moment of inertia 0.0123 kg*m² Protection category IP6K9K³) Maximal motor temperature 140 °C Allowed ambient temperature 20454 °C Cooling (medium, flow rate, inlet temperature, pressure) water/glycol 50/50, 8 l/min, \leq 45°C, \leq 0.5 bar Temperature monitoring 1 x KTY84-130 Type approval CE, EN 60034 Customs tariff number 8501 5230 Connectors Power terminals 3 x M25 cable gland Signal connectors M16, 10 Pin	Number of phases			3				
To constant (I $<$ I $_{nom}$) Un constant (AC) at a temperature of 30°C This: 19.5 peak: 33.2 V/(1000 Ke, constant (AC) at a temperature of 30°C This: 0.047 peak: 0.079 V/(rad*s) Additional Data Weight (w/o cables) Rotor moment of inertia Protection category Maximal motor temperature Allowed ambient temperature The meaning of the first in the temperature, pressure) The meaning of the first in the temperature water/glycol 50/50, 8 l/min, \le 45°C, \le 0.5 bar of the first in the first	Number of pole pairs			4				
Un constant (AC) at a temperature of 30°C rms: 19.5 peak: 33.2 V/(1000 M/s, constant (AC) at a temperature of 30°C rms: 0.047 peak: 0.079 V/(rad*s Additional Data Weight (w/o cables) Rotor moment of inertia see page 4 cender of a constant (AC) at a temperature 0.0123 kg*m² Protection category IP6K9K³) Peak: 0.079 V/(rad*s Allowed ambient temperature 140°C °C Peak: 0.079 V/(rad*s Cooling (medium, flow rate, inlet temperature, pressure) water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 bar Center of a constant (AC) at a temperature constant (AC)	Maximal efficiency			96			%	
K ₆ constant (AC) at a temperature of 30°C rms: 0.047 peak: 0.079 V/(rad*s Additional Data Weight (w/o cables) see page 4 Rection moment of inertia 0.0123 kg*m² kg*m² Protection category IP6K9K³ Protection category Protection category IP6K9K³ Protection category Protection category IP6K9K³ Protection category Protection	T/I constant (I <i<sub>nom)</i<sub>					0.29	Nm/A _{rms}	
Additional Data Weight (w/o cables) Retor moment of inertia Protection category Maximal motor temperature Allowed ambient temperature Cooling (medium, flow rate, inlet temperature, pressure) Temperature monitoring Type approval Customs tariff number Connectors Power terminals Signal connectors See page 4 0.0123 kg*m² 1P6K9K³) *C *C **C **C **C **C **C **C	U/n constant (AC) at a temperature of 30°C		rms:	19.5	peak:	33.2	V/(1000rpm)	
Weight (w/o cables)see page 4Rotor moment of inertia 0.0123 kg*m²Protection categoryIP6K9K³Maximal motor temperature 140 °CAllowed ambient temperature $-20 \dots 45^4$) °CCooling (medium, flow rate, inlet temperature, pressure)water/glycol 50/50, 8 l/min, $\leq 45^\circ$ C, ≤ 0.5 barTemperature monitoring $1 \times KTY84-130$ Type approvalCE, EN 60034Customs tariff number 85015230 Power terminals $3 \times M25$ cable glandSignal connectorsM16, 10 Pin	$K_{\rm e}$ constant (AC) at a temperature of 30°C		rms:	0.047	peak:	0.079	V/(rad*s-1)	
Rotor moment of inertia $0.0123 \text{ kg}^*\text{m}^2$ Protection category IP6K9K3) Maximal motor temperature 140 °C Allowed ambient temperature $-20 \dots 45^4 \text{ °C}$ Cooling (medium, flow rate, inlet temperature, pressure) water/glycol 50/50, 8 l/min, $\leq 45 \text{ °C}$, $\leq 0.5 \text{ bar}$ Temperature monitoring $1 \times \text{KTY84-130}$ Type approval CE, EN 60034 Customs tariff number 8501 5230 Connectors Power terminals $3 \times \text{M25}$ cable gland Signal connectors M16, 10 Pin		Ad	ditional Data					
Protection category Maximal motor temperature Allowed ambient temperature Allowed ambient temperature Cooling (medium, flow rate, inlet temperature, pressure) Temperature monitoring Type approval Customs tariff number Connectors Connectors Signal connectors IP6K9K3) **C **C **C **C **C **C **C *	Weight (w/o cables)			see page 4				
Maximal motor temperature Allowed ambient temperature -20 45⁴) °C Cooling (medium, flow rate, inlet temperature, pressure) Femperature monitoring 1 x KTY84-130 Type approval Customs tariff number Connectors Power terminals 3 x M25 cable gland M16, 10 Pin	Rotor moment of inertia			0.0123			kg*m²	
Allowed ambient temperature -20 45 ⁴) °C Cooling (medium, flow rate, inlet temperature, pressure) Temperature monitoring 1 x KTY84-130 Type approval Customs tariff number Connectors Connectors 3 x M25 cable gland Signal connectors M16, 10 Pin	Protection category		IP6K9K³)					
Cooling (medium, flow rate, inlet temperature, pressure) Temperature monitoring Type approval Customs tariff number Connectors Power terminals Signal connectors water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 bar 1 x KTY84-130 CE, EN 60034 8501 5230 Connectors M16, 10 Pin	Maximal motor temperature 14			140	°C			
Temperature monitoring 1 x KTY84-130 Type approval Customs tariff number 8501 5230 Connectors Power terminals 3 x M25 cable gland Signal connectors M16, 10 Pin	Allowed ambient temperature			-20 45 ⁴⁾			°C	
Type approval Customs tariff number Connectors Connectors 3 x M25 cable gland Signal connectors M16, 10 Pin	Cooling (medium, flow rate, inlet temperature, pressure) water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 b).5 bar				
Customs tariff number 8501 5230 Connectors Power terminals 3 x M25 cable gland Signal connectors M16, 10 Pin	emperature monitoring 1 x KTY84-13			34-130				
Connectors Power terminals 3 x M25 cable gland Signal connectors M16, 10 Pin	Type approval			CE, EN 60034				
Power terminals 3 x M25 cable gland Signal connectors M16, 10 Pin	Customs tariff number		8501 5230					
Signal connectors M16, 10 Pin		C	Connectors					
	Power terminals			3 x M25 cable gland				
Cooling connectors 2 x ¾" / 19 mm	Signal connectors			M16, 10 Pin				
	Cooling connectors			2 x ¾" / 19 mm				

 $^{^{\}rm 1)}\,\rm Nominal$ 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

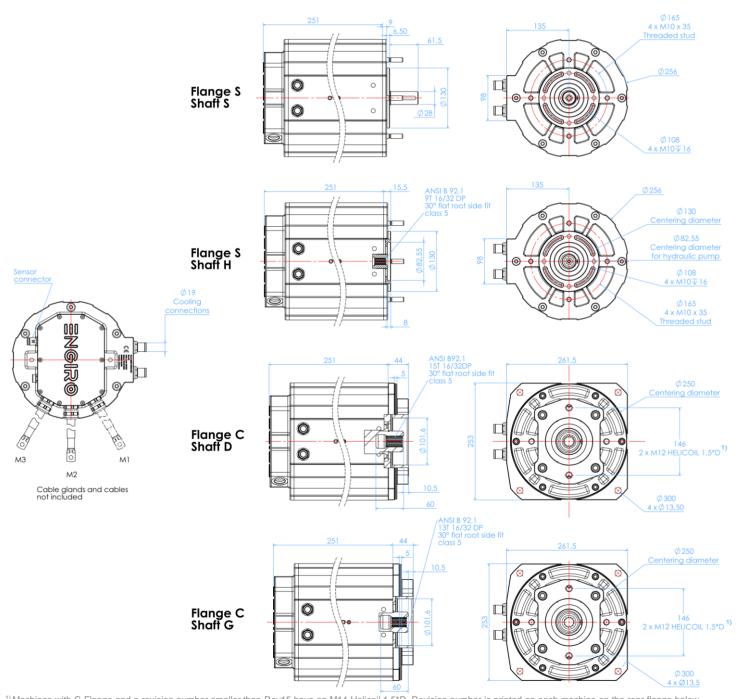
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Technical Drawings



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-08016-	C: flange for fan without insert	H: hollow shaft with internal splines ANSI B 92.1 9T			
		D: hollow shaft with internal splines ANSI B 92.1 15T			
		G: hollow shaft with internal splines ANSI B 92.1 13T			



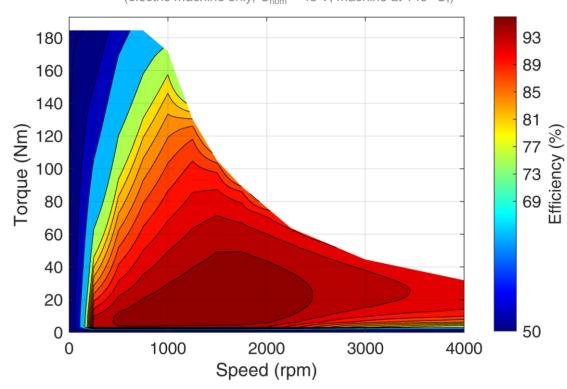
¹⁾ Machines with C-Flange and a revision number smaller than Rev15 have an M14 Helicoil 1,5*D. Revision number is printed on each machine on the rear flange below the water-cooling hose barbs.

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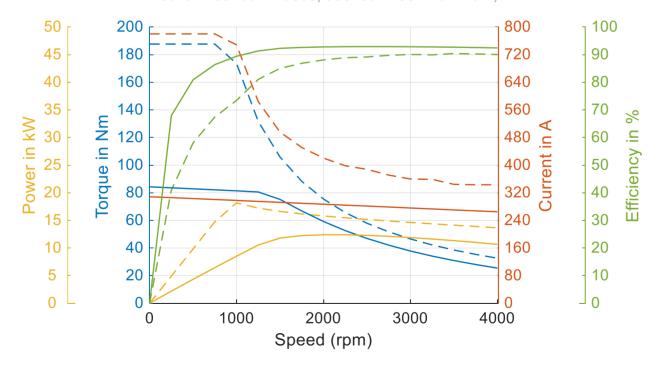
Characteristics Machine



Simulated Efficiency of Motor Application (electric machine only; *U*_{nom} = 48 V; machine at 140 °C;)



Simulated Characteristic Motor Parameters $U_{\text{nom}} = 48 \text{ V}$ solid lines: continuous; dashed lines: maximum;

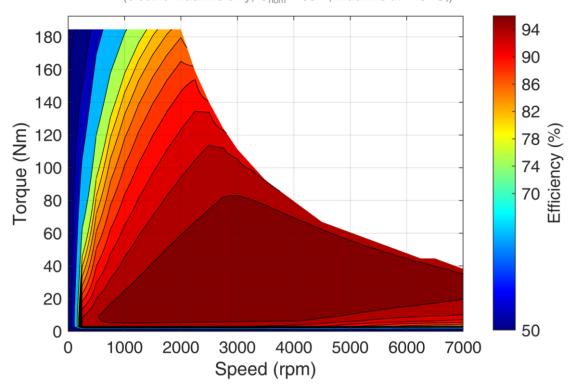


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Characteristics Machine



Simulated Efficiency of Motor Application (electric machine only; $U_{nom} = 96 \text{ V}$; machine at 140 °C;)



Simulated Characteristic Motor Parameters $U_{\text{nom}} = 96 \text{ V}$ solid lines: continuous; dashed lines: maximum;

