

# 205A-08011-JHE 48V Hydraulic Set

14 kW drive set for hydraulic applications

Art.-No.: 1885



## KEY FEATURES

- Interior permanent magnet synchronous machine
- 48V 3-phase motor controller
- Full torque at zero speed
- Air-cooled

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### To be noted:

The information in this technical data sheet is based on our current knowledge and experience. Due to the wide range of possible influences during application, they do not exempt the processor and user from carrying out their own tests and trials. Although the suitability for a specific application can be estimated from our information, a legally binding assurance is by no means possible. Depending on the individual case, we recommend consultation with us. Any industrial property rights and applicable laws must be observed by the recipient of our products on his own responsibility.

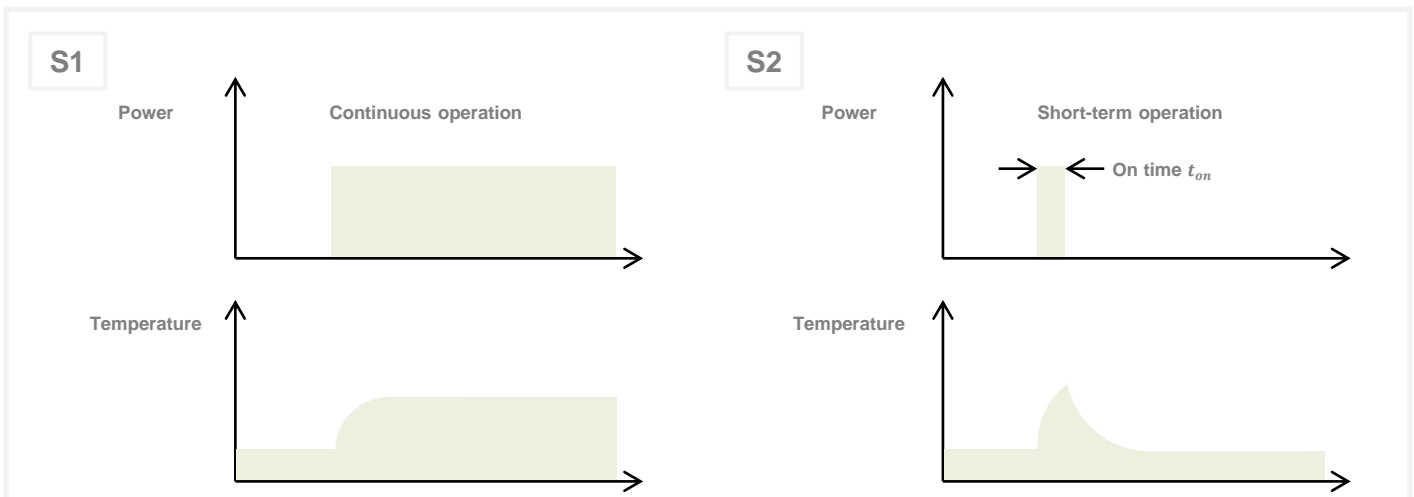
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## Characteristic Operating Points<sup>1)</sup> (cooling as specified on next page)

		S1	S2	S2	
Feasible operation time	$t_{on}$	continuous	300 sec	60 sec	
Torque	$T$	65	105	126	Nm
Power	$P$	14	19	20	kW
Phase rms-current (AC)	$I_{rms}$	330	500	600	A
Battery current (DC)	$I_{DC}$	331	477	564	A
Battery voltage (DC)	$U_{DC}$	48	48	48	V
Speed	$n$	2000	1750	1500	rpm
Electric frequency	$f_{el}$	200	175	150	Hz
Set Efficiency	$\eta_{tot}$	87	84	74	%

## Maximum Operating Range

		Min.	Nom.	Max.	
Torque	$T_{max}$	-	65 <sup>2)</sup>	126 <sup>2)</sup>	Nm
Power	$P_{max}$	-	14	20	kW
Phase rms-current (AC)	$I_{rms,max}$	-	330 <sup>3)</sup>	600 <sup>3,4)</sup>	A
Battery current (DC)	$I_{DC,max}$	-	331 <sup>3)</sup>	564 <sup>3,4)</sup>	A
Battery voltage (DC)	$U_{max}$	12 <sup>5)</sup>	48	70 <sup>5)</sup>	V
Speed	$n_{max}$	-	2000	3590 <sup>6)</sup>	rpm
Electric frequency	$f_{el}$	-	200	359	Hz



- 1) Defined Range only valid for a power factor of 1 at DC input
- 2) Torque rating is dependant on rotor temperature
- 3) The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.
- 4) Peak rating for max. 60 seconds on time
- 5) Derating < 16V & Derated generating power > 130V
- 6) Higher speeds available upon request. A detailed discussion of the functional safety concept of the vehicle is required.

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## S1 Operating Points Based on Cooling

$U_{nom} = 96V$		Specified S1 point on previous page		
Cooling definition (see below)		1	2	1 -
Minimal Flow Rate	$Q$	6	6	6 m/s
Maximum Ambient Temperature	$T_{amb}$	20	20	20 °C
Torque	$T$	65	65	65 Nm
Speed	$n$	2000	2000	2000 rpm
Power	$P$	14	14	14 kW
Phase rms-current (AC)	$I_{rms}$	330 <sup>1)</sup>	330 <sup>1)</sup>	330 <sup>1)</sup> A
Battery current (DC)	$I_{DC}$	331	331	331 A
Max. surface temperature	$T_{surf}$	≤ 90	≤ 89	≤ 100 °C
Min. surface temperature		≤ 69	≤ 62	≤ 100 °C

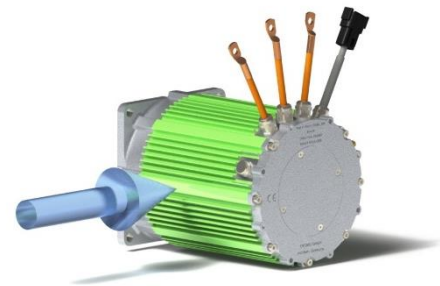
1) The cables must not exceed a temperature of 140 °C at any time.

### Cooling definition 1



Temperature sensors are placed on the surface of the green part of the housing.

### Cooling definition 2



Temperature sensors are placed on the surface of the green part of the housing. One sensor is directly cooled by the air flow.

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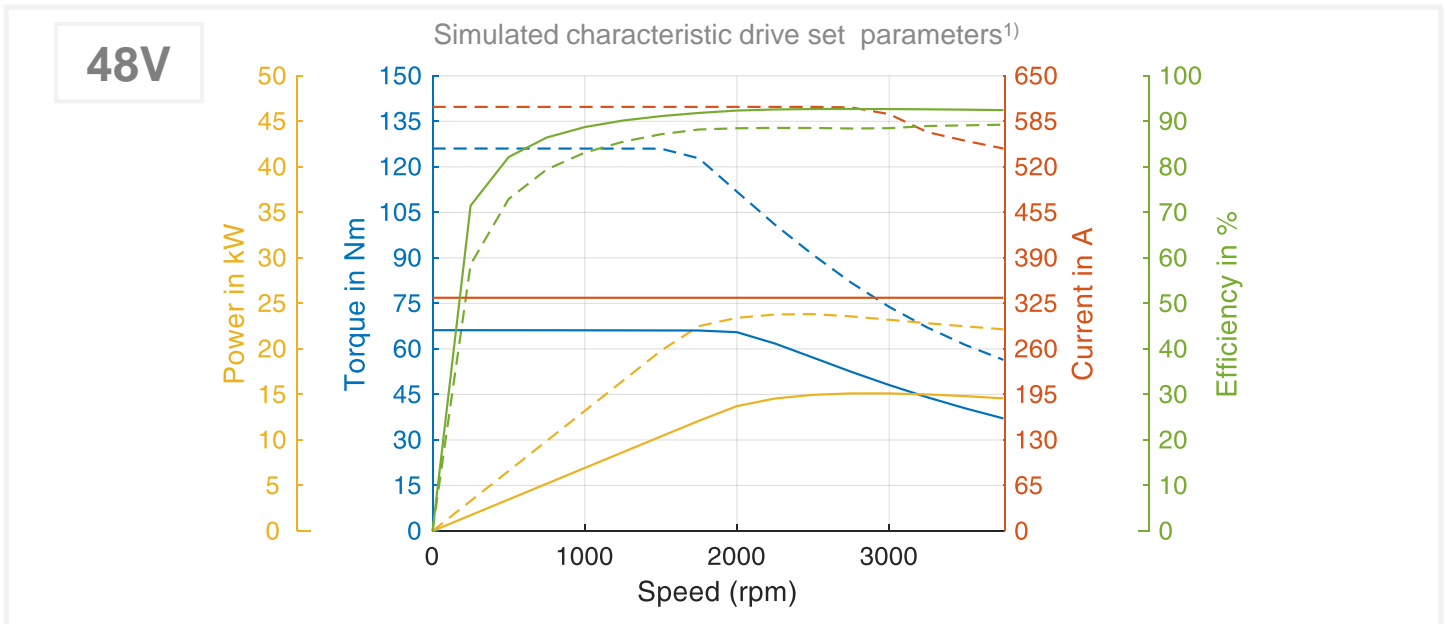
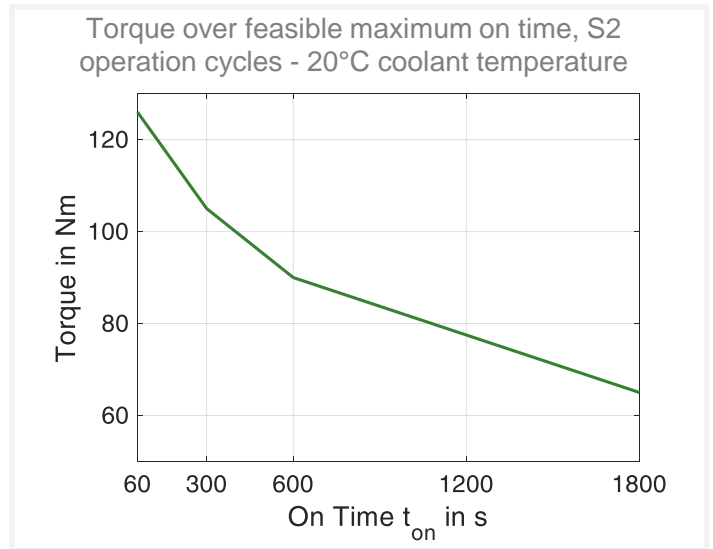
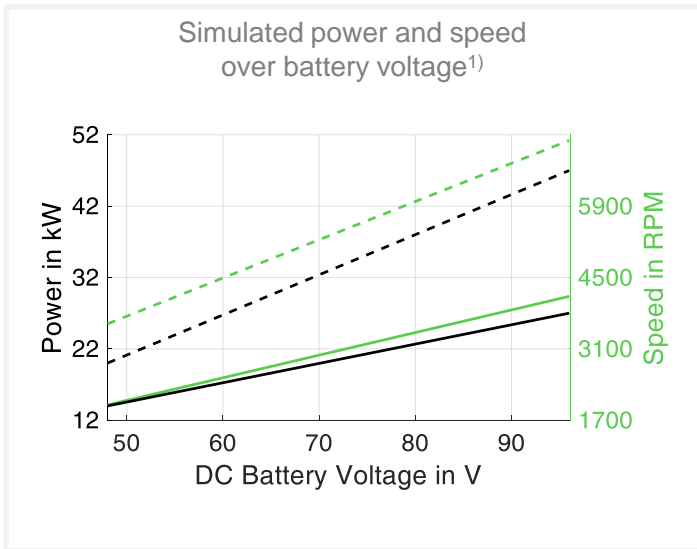
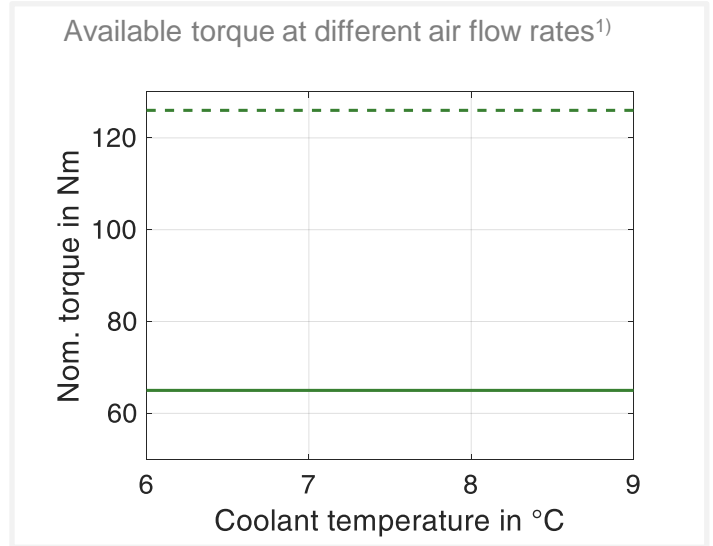
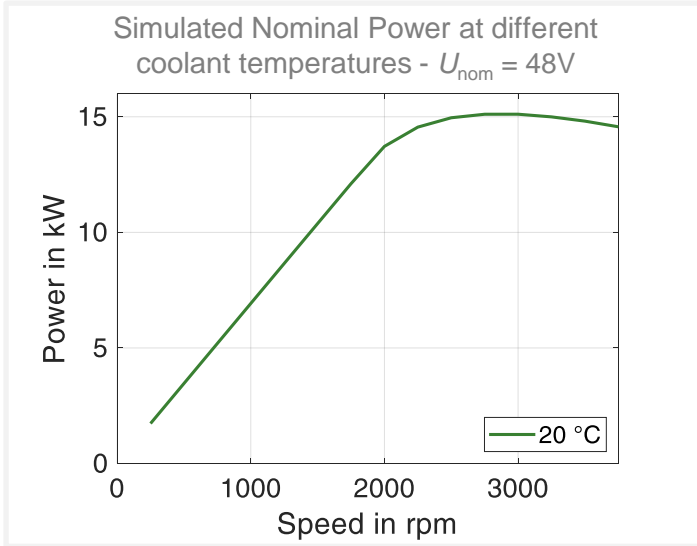
Additional Data				
		Motor	Inverter	
Weight (w/o cables)		29	4.9	kg
Rotor moment of inertia		0.015	-	kg*m <sup>2</sup>
Allowed range of ambient temperature		See page 4	-30 ... +85	°C
Cooling	Cooling Medium	air		
	Air Flow rate	See page 4	> 3	m/s
	Ambient temperature	See page 4	≤ 40	°C
DC link capacitance		-	8460	μF
Temperature monitoring		1 x KTY84-130	Internal	
Rotation direction		freely controllable via CAN-Bus		
Ports				
Power terminals		3 x 50mm <sup>2</sup> cables with M8 cable lugs		
Signal connectors		M16, 10 Pin		
Control and Communication				
Type		CAN, Hardware interface (analog/digital input)		
		Speed/Torque Control selectable via software		
CAN Bus	Symbol/Baud rate	100/125/250 kbaud/s		
	Technology	CANopen		
Torque Ramp		Safety limits can be set in inverter by ENGIRO.		
Speed Ramp		Safety limits can be set in inverter by ENGIRO.		

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Certifications			
	Motor	Inverter	
Type approval	CE, EN 60034	-	
Protection grade	ISO 20653 IP6K9K <sup>1)</sup>	ISO 20653 IP65	
EMC	-	EN12895 (2015), EN 61000-6-3 (2007) , EN61000-6-2 (2005)	
Functional safety	-	EN1175-1, machine directive 2006/42/EC	
Custom tariff number	8501 5230	8504 4088	

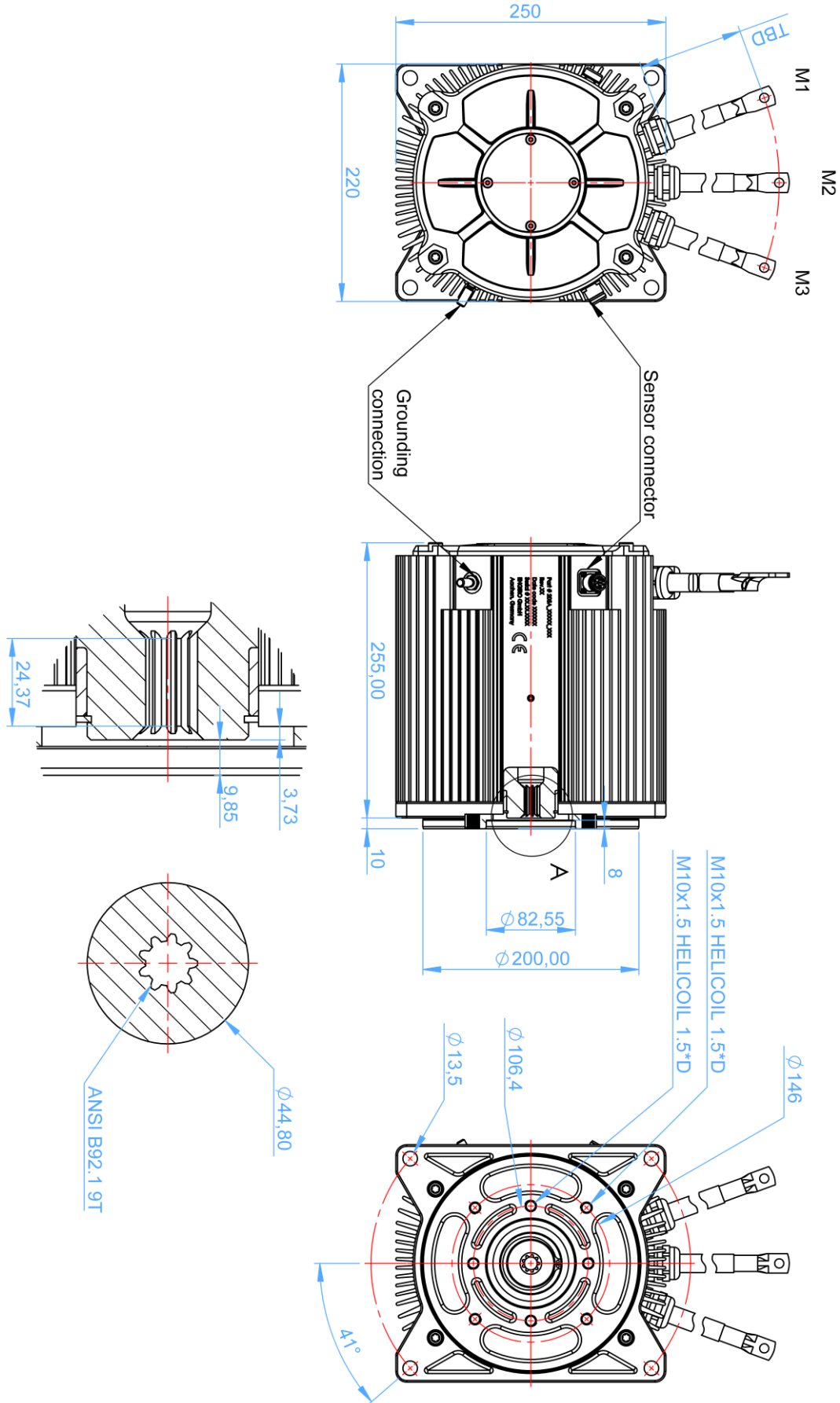
1) Only valid if the machines is installed with suitable cable glands and an appropriate shaft sealing.

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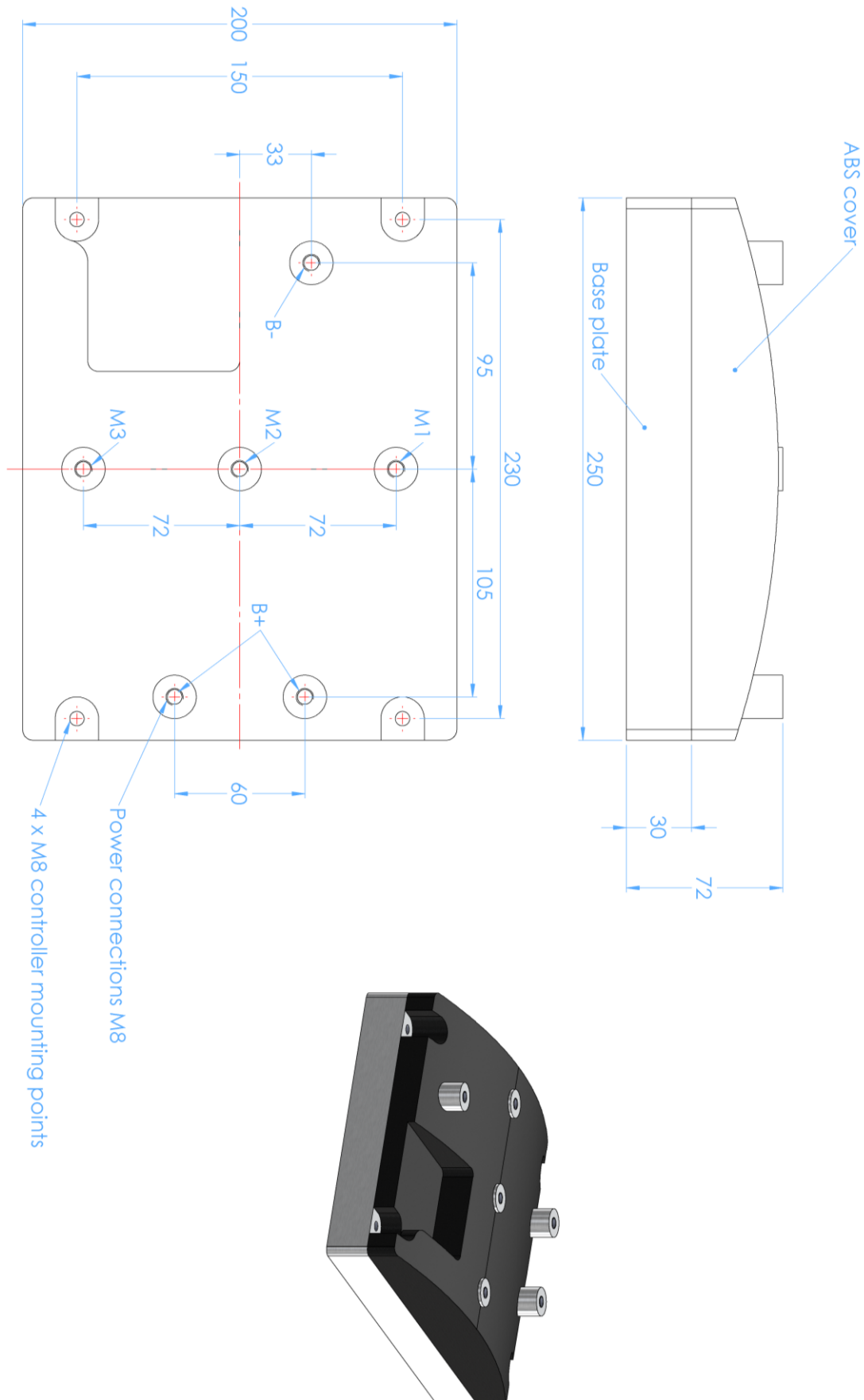
1) solid lines: continuous; dashed lines: maximum;

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Item description					Article number		
Available Motor Variants	Typical Application	A: flange	B: shaft	C: position sensor	Component	Set	
	Hydraulic	J: SAE-J744 Flange A	H: 9T internal splines SAE J744 Welle A	E: Encoder	205A-08011-JHE	<b>1885</b>	
ENGIRO 330/400/600A 48V Controller					1278	1x	included in set
Encoder + Temp. data cable for ENGIRO 205W 205A and ENGIRO 48-96 V controllers					1269	1x	

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