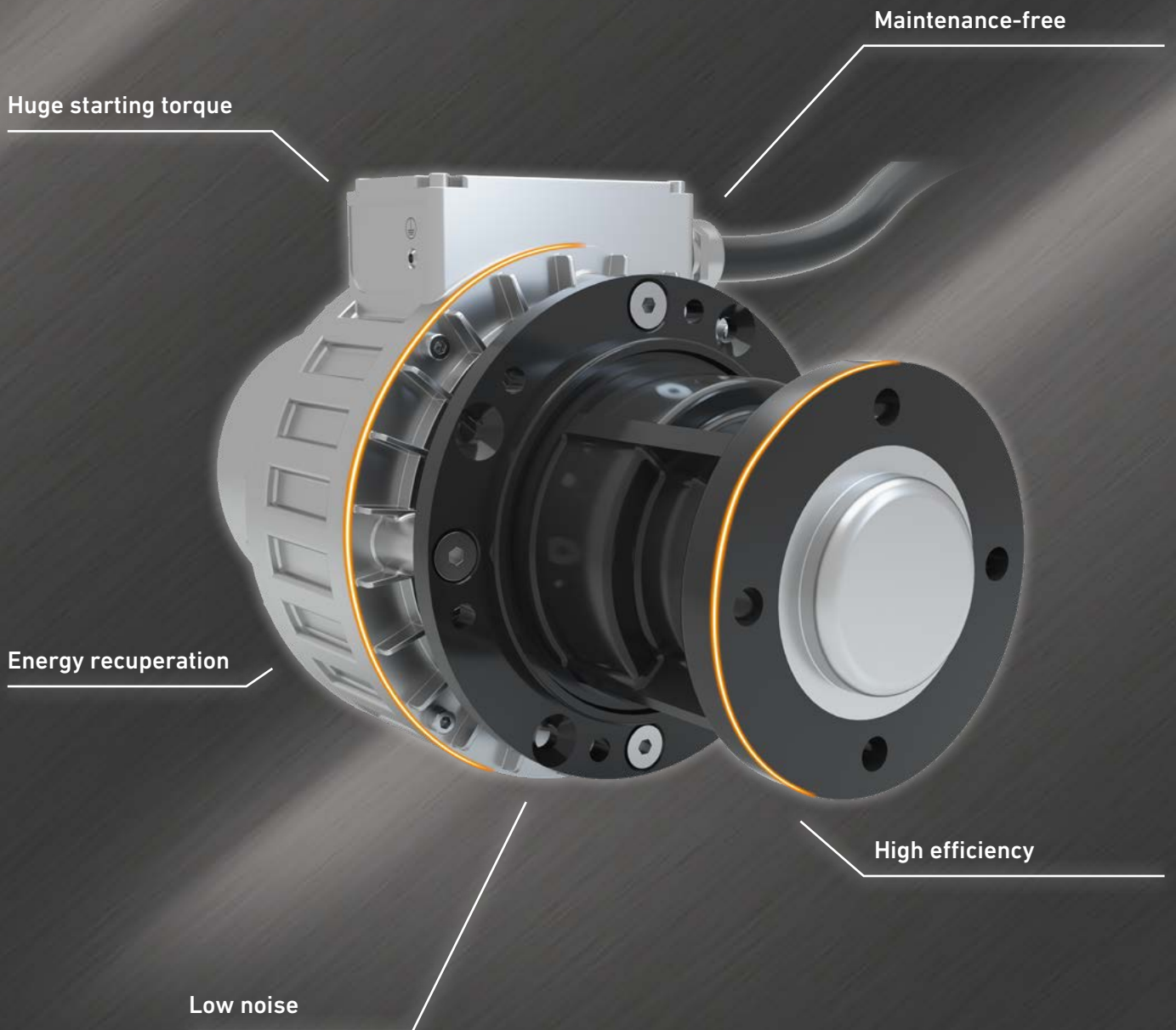


PMSG MOTORS

High-Torque Wheel Hub Drive



PMSG MOTORS

DESCRIPTION

The HEINZMANN PMSG Wheel Hub Drive convinces due to clean and environmentally friendly drive system without any pollution and noise.

His advantages are a huge starting torque with a high overload factor. Furthermore it's highly efficient and maintenance-free motor.

Because of the direct mount to the rim no axle is needed. The PMSG has an integrated planetary gear and a wheel bearing for a direct mount on the rim. An emergency brake is optional.

It is suitable for 2- as well as for 4-wheel drives.



RANGE OF APPLICATIONS

- ▶ Turf applications, lawn tractors
- ▶ Harvester
- ▶ Forklift trucks
- ▶ Lifters
- ▶ Floor care machinery
- ▶ Municipal vehicles
- ▶ Commercial vehicles
- ▶ Electric cars and NEV
- ▶ Replacement for hydraulic drives
- ▶ Fire-Fighting Vehicles



PMSG 100-500 (1.45 - 2.6 kW)

Motor data				
	Rated power	Rated speed	Rated load torque	Rated current
Voltage	kW	rpm	Nm	A
PMSG 100-500-1-7				
24 VDC	1.4	3000	4.5	69
	1.7	4500	5.5	83
48 VDC	2.3	3000	7.3	60
	2.6	4500	5.5	65
PMSG 100-500-2-16				
24 VDC	1.4	3000	4.5	69
	1.7	4500	3.5	83
48 VDC	2.3	3000	7.3	60
	2.6	4500	5.5	65
PMSG 100-500-2-24				
24 VDC	1.4	3000	4.5	69
	1.7	4500	3.5	83
48 VDC	2.3	3000	7.3	60
	2.6	4500	5.5	65
PMSG 100-500-2-42				
24 VDC	1.4	3000	4.5	69
	1.7	4500	3.5	83
48 VDC	2.3	3000	7.3	60
	2.6	4500	5.5	65

▶ Cooling: Forced ventilation ▶ m = 27.8 kg ▶ Operating mode = S1

Gearing data		
Gear ratio	Rated speed	Rated load torque
i	rpm	Nm
PMSG 100-500-1-7		
7	429	32
7	643	25
7	429	51
7	643	39
PMSG 100-500-2-16		
16	188	72
16	281	56
16	188	117
16	281	88
PMSG 100-500-2-24		
24	125	108
24	188	84
24	125	160
24	188	132
PMSG 100-500-2-42		
42	70	160
42	105	147
42	70	160
42	105	160

PMSG 120-1500 (3.0 - 8.0 kW)

Motor data				
	Rated power	Rated speed	Rated load torque	Rated current
Voltage	kW	rpm	Nm	A
PMSG 120-1500-2-25				
48 VDC	5.5	3000	17.5	127
	6	4500	12.7	134
96 VDC	6.4	3000	20.4	74
	7.5	4500	15.9	84
PMSG 120-1500-2-40				
48 VDC	5.5	3000	17.5	127
	6	4500	12.7	134
96 VDC	6.4	3000	20.4	74
	7.5	4500	15.9	84

▶ Cooling: Forced ventilation ▶ m = 27.8 kg ▶ Operating mode = S1

Gearing data		
Gear ratio	Rated speed	Rated load torque
i	rpm	Nm
PMSG 120-1500-2-25		
25	120	438
25	180	318
25	120	510
25	180	398
PMSG 120-1500-2-40		
40	70	735
40	105	533
40	70	800
40	105	668

PMSG 150-1500 (8.5 - 14.0 kW)

Motor data

	Rated power	Rated speed	Rated load torque	Rated current
Voltage	kW	rpm	Nm	A
PMSG 150-1500-2-25				
48 VDC	8.5	3000	27.1	570
	8.5	4500	18.0	850
96 VDC	10.5	3000	33.4	320
	14	4500	29.7	460
PMSG 150-1500-2-40				
48 VDC	8.5	3000	27.1	570
	8.5	4500	18.0	850
96 VDC	10.5	3000	33.4	320
	14	4500	29.7	460

► Cooling: Forced ventilation ► m = 27.8 kg ► Operating mode = S1

Gearing data

Gear ratio	Rated speed	Rated load torque
i	rpm	Nm
25	120	678
25	180	450
25	120	800
25	180	743
40	70	800
40	105	756
40	70	800
40	105	800

GEARING DATA

	PMSG xxx-500	PMSG xxx-1500	PMSG xxx-4000
Single-stage	7	–	–
Two-stage	16, 24, 42	25, 40	24, 32
Three-stage	–	100, 150	–
Decoupling optionally possible, except for gear ratio $i = 7$ & $i = 42$			
Continuous torque	160 Nm	800 Nm	1.600 Nm
Max. peak torque	500 Nm	2.000 Nm	4.000 Nm
Max. axial forces	2.500 N	5.000 N	9.000 N
Max. radial forces	7.000 N	21.000 N	45.000 N
Efficiency	94 %	94 %	94 %
Lubrication	Lifetime	Lifetime	Lifetime
Lifetime	20.000 hours (depending on application)	20.000 hours (depending on application)	20.000 hours (depending on application)
Degree of protection	up to IP67	up to IP67	up to IP67
Weight planetary gear	~ 7 kg	14 – 17,5 kg	38 – 44 kg

Standard version

Power connection: Cable length 1 m, open cable ends Motor feedback: Probe with sin/cos-output
Encoder connection: Cable length 1 m, open cable ends Temperature sensor: KTY 84-130
Cooling: External ventilation, generated independently from motor, min. air velocity > 5 m/s required

PMSG 156W-4000 (15.0 - 25.0 kW)

Motor data

	Rated power	Rated speed	Rated load torque	Rated current
Voltage	kW	rpm	Nm	A
PMSG 156W-4000-2-24				
96 VDC	18.5	3000	58.9	237
	21	4500	44.6	250
PMSG 156W-4000-2-32				
96 VDC	18.5	3000	58.9	69
	23	4500	48.8	85

► Cooling: Liquid-cooled ► m = 27.8 kg ► Operating mode = S1

Gearing data

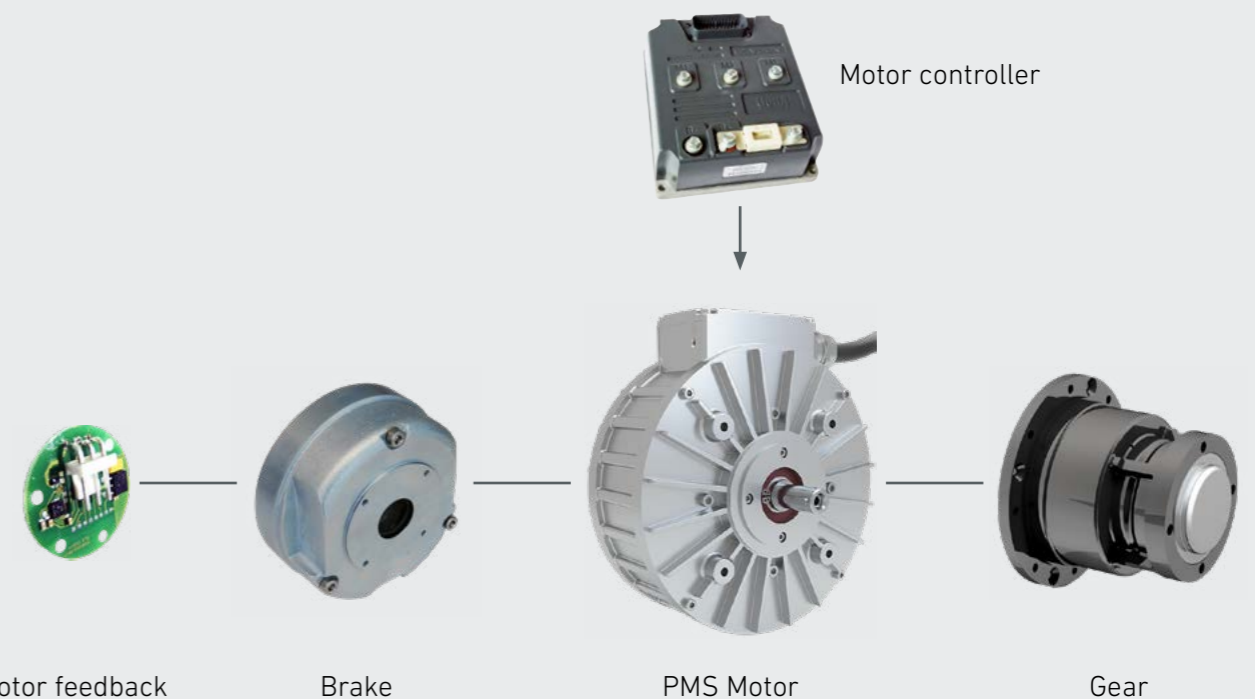
Gear ratio	Rated speed	Rated load torque
i	rpm	Nm
24	125	1413
24	188	1070
32	93	1600
32	140	1561

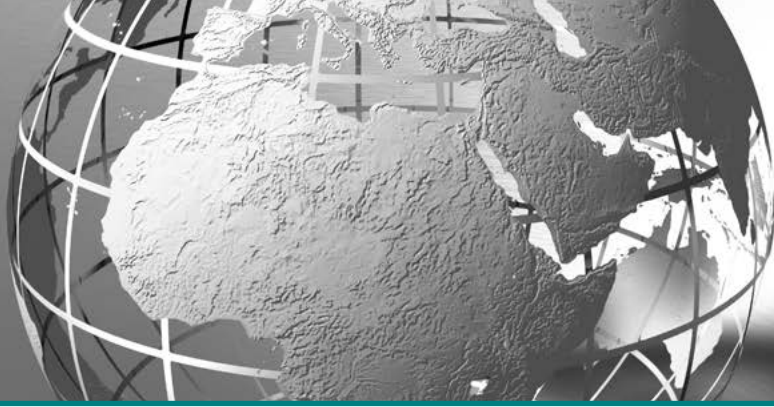
All specified engine parameters are calculated and may deviate slightly.

Subject to change without notice. The versions shown represent a selection. The complete list of all standard combinations is made up of engine list and gearbox table that can be found in our product catalogue "Electric Drives".

Special variants on request.

SYSTEM OVERVIEW





HEINZMANN GROUP – THINKING IN DRIVE AND CONTROL

HEINZMANN is a globally active family business founded in 1897 with its headquarters in Schönau (Germany), in the Black Forest.

Today, in the field of engine management HEINZMANN is one of the leading suppliers of components and systems for industrial combustion engines, generators and turbines. As a specialist and development partner, HEINZMANN is committed to developing exactly the right solution for increasing efficiency and reducing emissions.

In the Electric Drives division, HEINZMANN also demonstrates innovative strength and development expertise in engine technologies of the future. The company has established itself as a reliable partner and system provider for electric drive systems.

Our collaborative interaction with more than 40 globally active subsidiaries and sales companies characterizes the spirit within the HEINZMANN group of companies and makes us a reliable partner.

HEINZMANN SUBSIDIARIES

Headquarters HEINZMANN Group Germany

Germany

**Heinzmann
GmbH & Co. KG**
Schönau

Phone +49 7673 8208-0
info@heinzmann.de
www.heinzmann.com

Australia

Heinzmann Australia Pty Ltd

Geebung QLD
Phone +61 7 3868 3333
info.au@heinzmann.com
www.heinzmann.com.au

China

**Heinzmann Power Control
(Jiaxing) Co. Ltd.**

Jiashan
Phone +86 573 8466 1358
hzm-sh@heinzmann.com
www.heinzmann.cn

CPK Automotive GmbH & Co. KG

Münster
Phone +49 251 777 969-0
info@cpk-automotive.com
www.cpk-automotive.com

United Kingdom

Heinzmann UK Ltd.

Middlesbrough
Phone +44 1 642 467 484
info@heinzmannuk.com
www.heinzmann-turbine-
controls.com

Regulateurs Europa Ltd.

Colchester
Phone +44 1206 799 556
sales@regulateurseuropa.com
www.regulateurseuropa.com

Giro Engineering Ltd.

Southampton, Hampshire
Phone +44 1489 885 288
giro@giroeng.com
www.giroeng.com

Korea

**Heinzmann /
Regulateurs Europa
Korea Pte. Ltd.**

Ulsan
Phone +82 52 227 7673
heinzmann@korea.com

The Netherlands

Regulateurs Europa B.V.

Roden
Phone +31 5050 19888
sales@regulateurs-europa.com
www.regulateurseuropa.com

Norway

Heinzmann Automation AS

Kleppestø
Phone +47 55 26 56 86
post@heinzmann.no
www.heinzmann.no

Austria

Heinzmann IFT GmbH

Uderns
Phone +43 5288 62258-0
office@ift-gmbh.com
www.ift-gmbh.com

South Africa

Heinzmann Südafrika

Stellenbosch
Phone +27 82 6898100
diemont@worldonline.co.za

Ukraine

**Heinzmann /
Regulateurs Europa**

Kiev
Phone +38 44 331 96 75
hzm-kiev@hzm.com.ua

USA

**Heinzmann /
Regulateurs Europa
America Inc.**

Glendale Heights, IL
Phone +1 970 484 1863
info.usa@heinzmann.com