

Solution provider for test benches

DASYM

Saving energy and costs with asynchronous machine modules

Series

ECODyn

Asynchronous motor module

Serie **ECODyn**

Converter

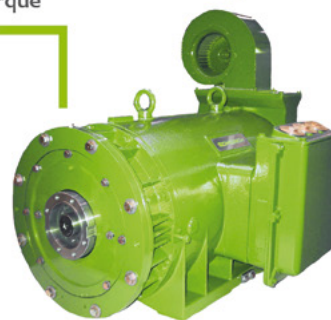


Mains connection

External automatism system
or controller

Speed

Torque



Motor

Combustion engine

DASYM ECODyn modules

The DASYM ECODyn drive and load units convince with their coordinated standard components from renowned manufacturers that provide planning and implementation reliability. DASYM also offers short delivery times and reliable processing through its close network with partners and suppliers. With more than 35 years of experience in test bench technology, we are pleased to offer you our proven products and our know-how.

The ECODyn modules are divided into five categories:

- There are three ECODyn modules H, M, L for combustion engines. They are optimised for testing petrol and diesel engines from 108 - 580 kW and for commercial vehicle diesel and gas engines from 250 - 750 kW.
- The ECODyn Module E has been specially developed and designed for electrical and hybrid test benches. It is ideal for engines in the 147 - 265 kW power range.
- For powertrain test benches there is the ECODyn Module G, which is specialized in the testing of powertrains in the electromobility sector and in transmission development. It convinces our customers with its high torques and a maximum speed of up to 4000 rpm.

The basic scope always consists of:

- Asynchronous machine with torque measuring flange and speed sensor and
- Regenerative converter system with input rectifier and inverter
- Fully configured as module

Data of the ECODyn product series

Type	Power / Torque / Speed from	Power / Torque / Speed up to
ECODyn 108H to 470H 108 kW	108 kW / 200 Nm / 12,000 rpm	470 kW / 990 Nm / 9,000 rpm
ECODyn 265M to 580M 265 kW	265 kW / 730 Nm / 10,000 rpm	580 kW / 1390 Nm / 8,500 rpm
ECODyn 235L to 810L 235 kW	235 kW / 1070 Nm / 5,000 rpm	810 kW / 5130 Nm / 3,500 rpm
ECODyn 147E to 265E 147 kW	147 kW / 226 Nm / 20,000 rpm	250 kW / 500 Nm / 20,000 rpm
ECODyn 270G to 382G 270 kW	2270 kW / 4160 Nm / 4,000 rpm	382 kW / 5000 Nm / 3,000 rpm

- ECODyn modules are fully planned and contain all the necessary features that are crucial for engine testing and powertrain testing.
- An integrated mains filter provides for mains safety, in the direction of the motor suppressing voltage peaks with integrated du/dt filters at the frequency inverter output, thus increasing the life time of the motors.
- The standard components contained in all ECODyn modules comply with CE conformity.

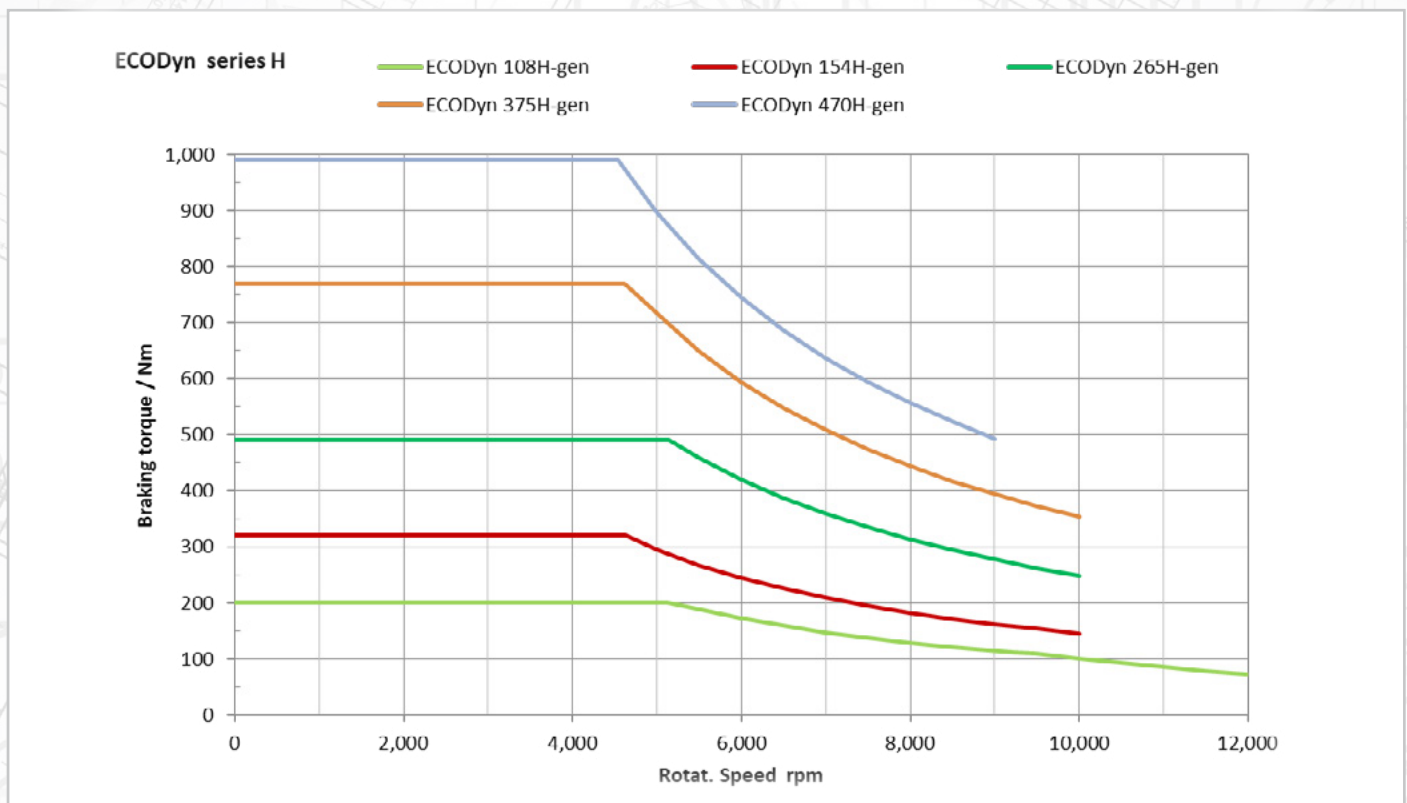
ECODyn H series (High Speed - Low Inertia)

The drive and load machines of the **ECODyn** H series are designed for test bench applications with Otto engines. Their low mass moments of inertia and high overload factors allow high speed gradients of up to 19,000 rpm/s and thus high dynamics.

ECODyn module data (generator)		ECODyn 108H	ECODyn 154H	ECODyn 265H	ECODyn 375H	ECODyn 470H	
nominal voltage	V	460	440	460	460	460	
nominal power	kW	108	154	265	375	470	
nominal torque	Nm	200	320	490	770	990	
rated speed	rpm	5137	4628	5148	4616	4548	
maximum speed	rpm	12.000	10,000	10,000	10,000	9,000	
rated current	A	155	247	359	543	640	
mass moment of inertia	kg m ²	0,2	0.22	0.29	0.65	0.91	
maximum speed gradient (gen) up to nominal speed incl. overload	rpm/s	11240	16378	19105	13494	12428	
weight	kg	650	600	700	1000	1200	
All motors are air-cooled, speed sensor ROD 436 and torque flange HBM T40B are mounted							1000

Special modules with customer-specific data are possible within this standard series.

Torque diagrams generator operation of the H-series



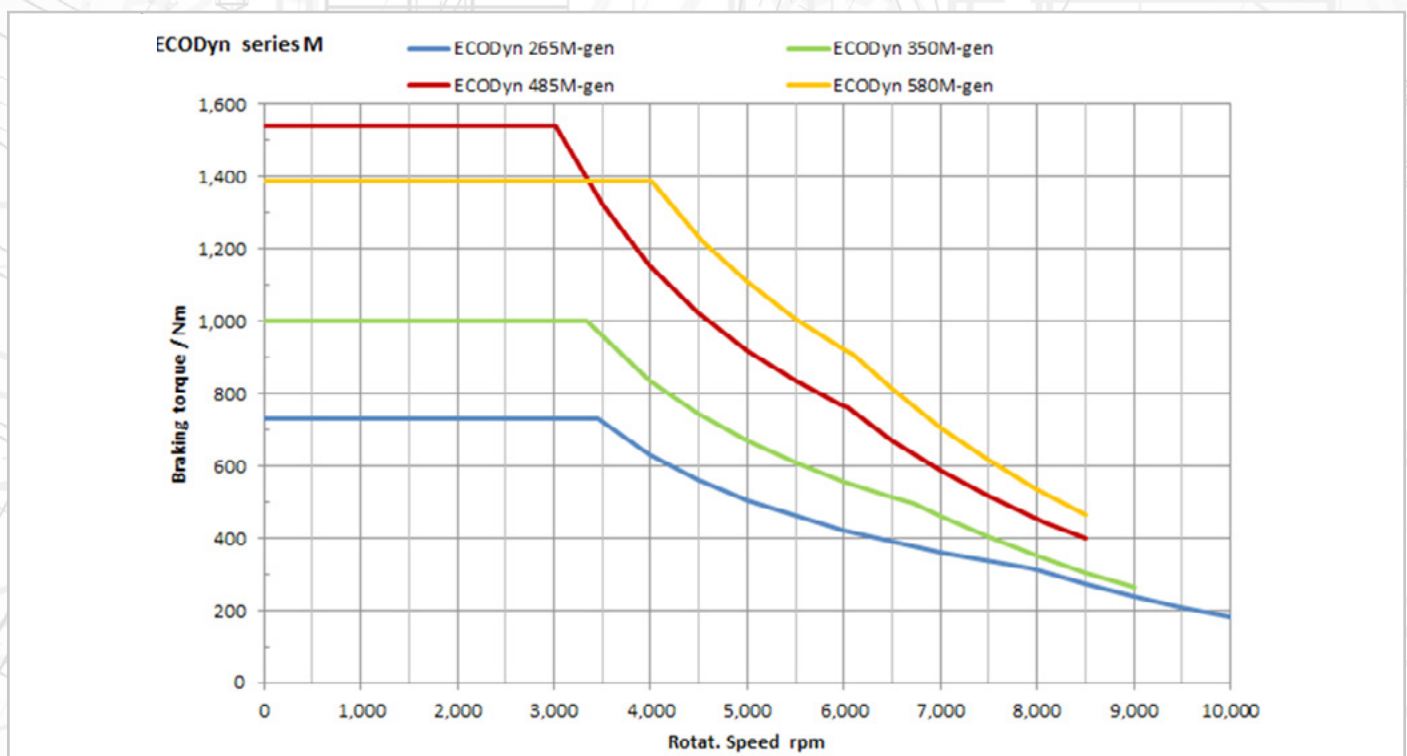
ECODyn M series (Middle Speed - High Torque)

The drive and load machines of the **ECODyn M** series are designed for test bench applications with small and medium-sized diesel engines as well as large gasoline engines. Their high torques in the nominal speed range and their wide speed ranges offer speed gradients of up to 13,000 rpm/s and thus dynamics for demanding simulations.

ECODyn module data (regenerative)		ECODyn 265M	ECODyn 350M	ECODyn 480M	ECODyn 580M
nominal voltage	V	460	460	380	460
nominal power	kW	265	350	480	580
nominal torque	Nm	730	1000	1530	1390
rated speed	rpm	3452	3341	3008	4000
maximum speed	rpm	10,000	9,000	8,500	8,500
rated current	A	359	451	786	805
mass moment of inertia	kg m ²	0.65	0.91	1.81	1.81
maximum speed gradient (gen) up to nominal speed incl. overload	rpm/s	12793	12554	9672	8787
weight	kg	1000	1200	1300	1300
All motors are air-cooled, speed sensor ROD 436 and torque flange HBM T40B are mounted					

Special modules with customer-specific data are possible within this standard series.

Torque diagrams generator operation of the M-series



ECODyn L series (Low Speed - Heavy Duty)

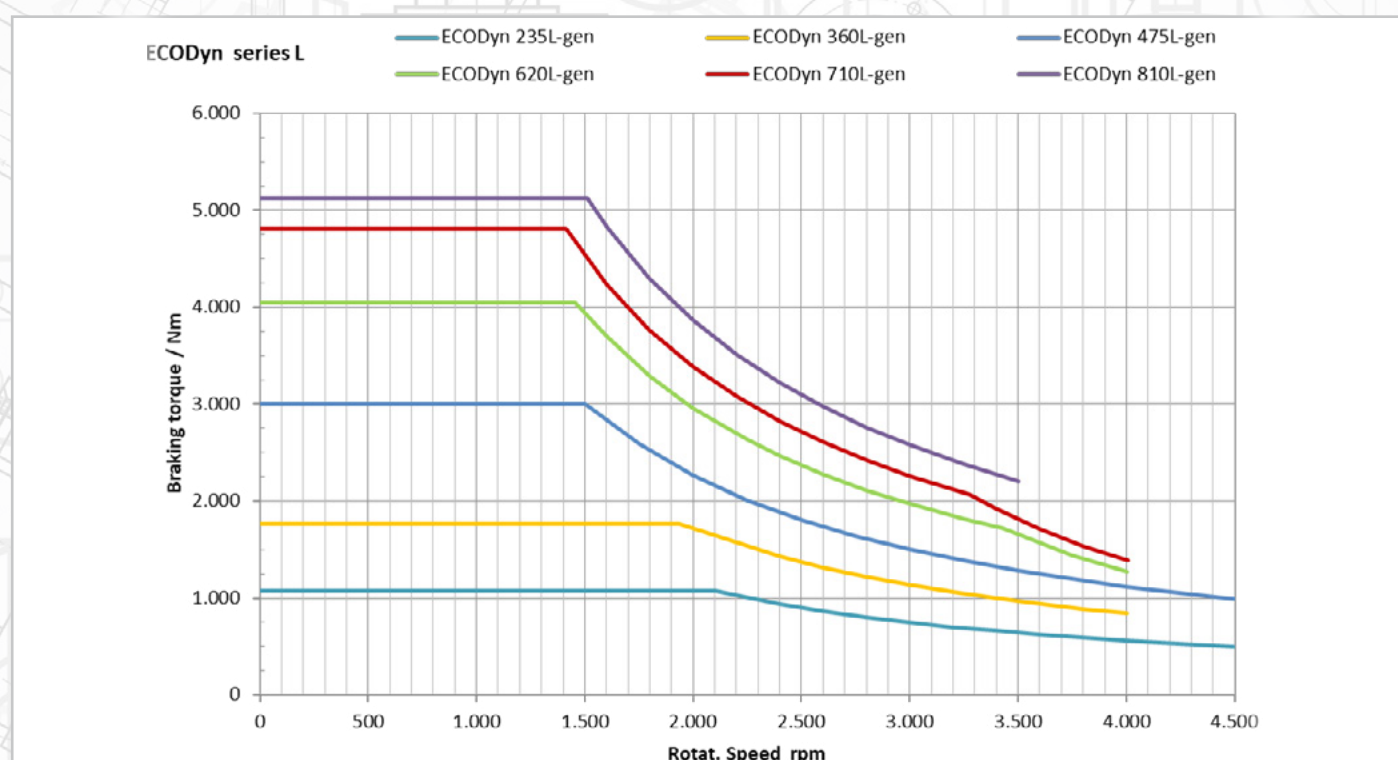
The drive and load machines of the **ECODyn** L series have very high torques. This makes them ideal for test bench applications with medium and large diesel engines in the commercial vehicle industry.

ECODyn module data (regenerative)		ECODyn 235L	ECODyn 360L	ECODyn 475L	ECODyn 620L	ECODyn 710L	ECODyn 810L
nominal voltage	V	440	460	460	690	690	690
nominal power	kW	235	360	475	620	710	810
nominal torque	Nm	1070	1760	3000	4050	4810	5130
rated speed	rpm	2109	1937	1504	1458	1413	1513
maximum speed	rpm	5,000	4,000	4,500	4,000	4,000	3,500
rated current	A	349	485	669	572	650	766
mass moment of inertia	kg m ²	0.91	5.01	6.72	14.18	18.57	18.57
maximum speed gradient (gen) up to nominal speed incl. overload	rpm/s	13433	4023	5109	3271	2967	3164
weight	kg	1200	1400	2000	2700	3800	3800

The motors up to 475L are air-cooled, the types 620L - 810L are water-jacket-cooled, speed sensor ROD436 and torque flange T40B are mounted

Special modules with customer-specific data are possible within this standard series.

Torque diagrams regenerative operation of the L-series



ECODyn E series (e-mobility)

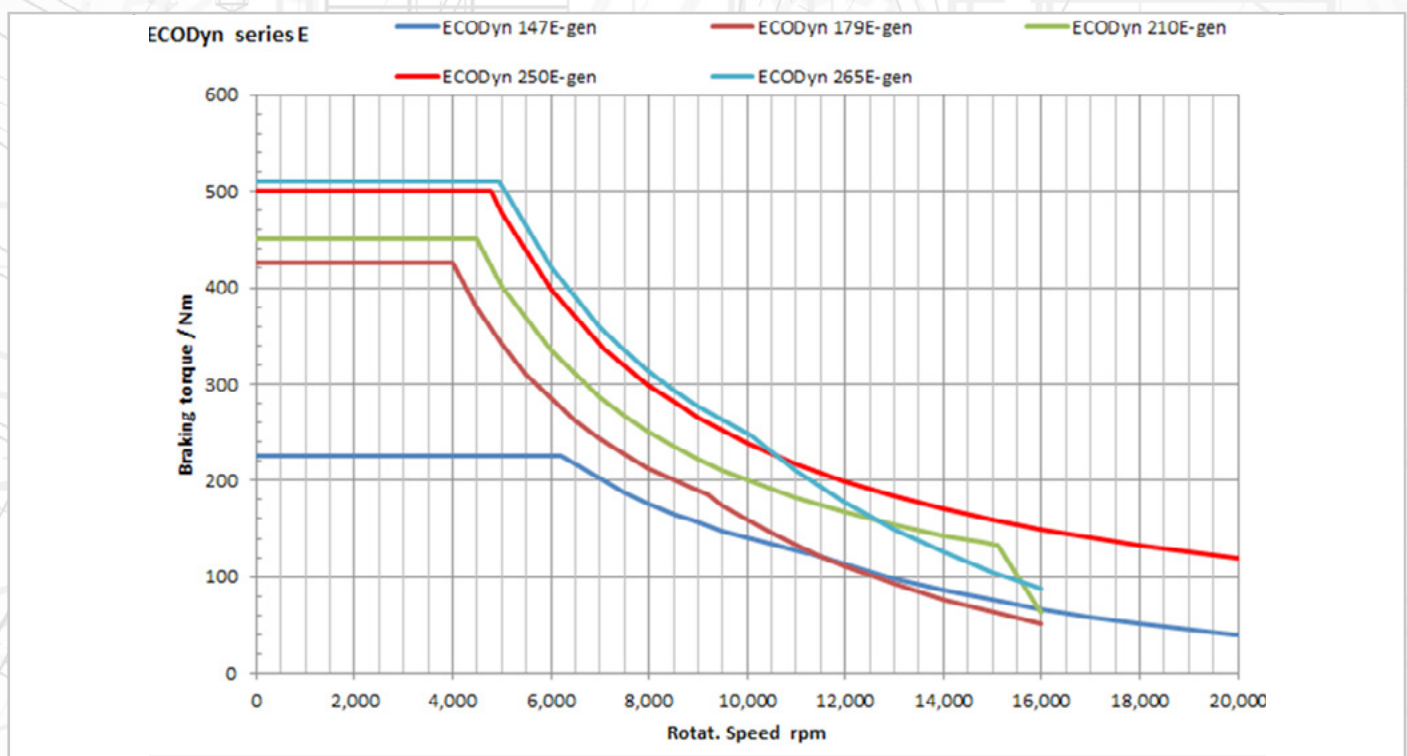
The drive and load machines of the **ECODyn** E series are designed for test bench applications in the field of e-mobility. The maximum speed is 20,000 rpm. Their high torques and low mass moments of inertia offer speed gradients of up to 26,000 rpm/s and thus very good dynamics for demanding simulations.

ECODyn module data (generator)		ECODyn 147E	ECODyn 179E	ECODyn 210E	ECODyn 250E	ECODyn 265E
nominal voltage	V	430	460	340	317	460
nominal power	kW	147	179	210	250	265
nominal torque	Nm	226	425	450	500	510
rated speed	rpm	6219	4003	4490	4770	4954
maximum speed	rpm	20,000	16,000	16,000	20,000	16,000
rated current	A	223	238	393	620	369
mass moment of inertia	kg m ²	0.134	0.294	0.294	0.334	0.294
maximum speed gradient (gen) up to nominal speed incl. overload	rpm/s	24176	16571	17545	17160	19885
weight	kg	575	700	700	700	785

Motors 147E and 250E are water-cooled + forced cooling fan for internal cooling, speed sensor HMC16 and measuring flange HBM T40B are mounted; motors 179E, 210E and 265E are air-cooled, speed sensor ROD 486 and torque measuring flange HBM T40B are mounted.

Special modules with customer-specific data are possible within this standard series.

Torque diagrams generator operation of the E-series



ECODyn G-Series

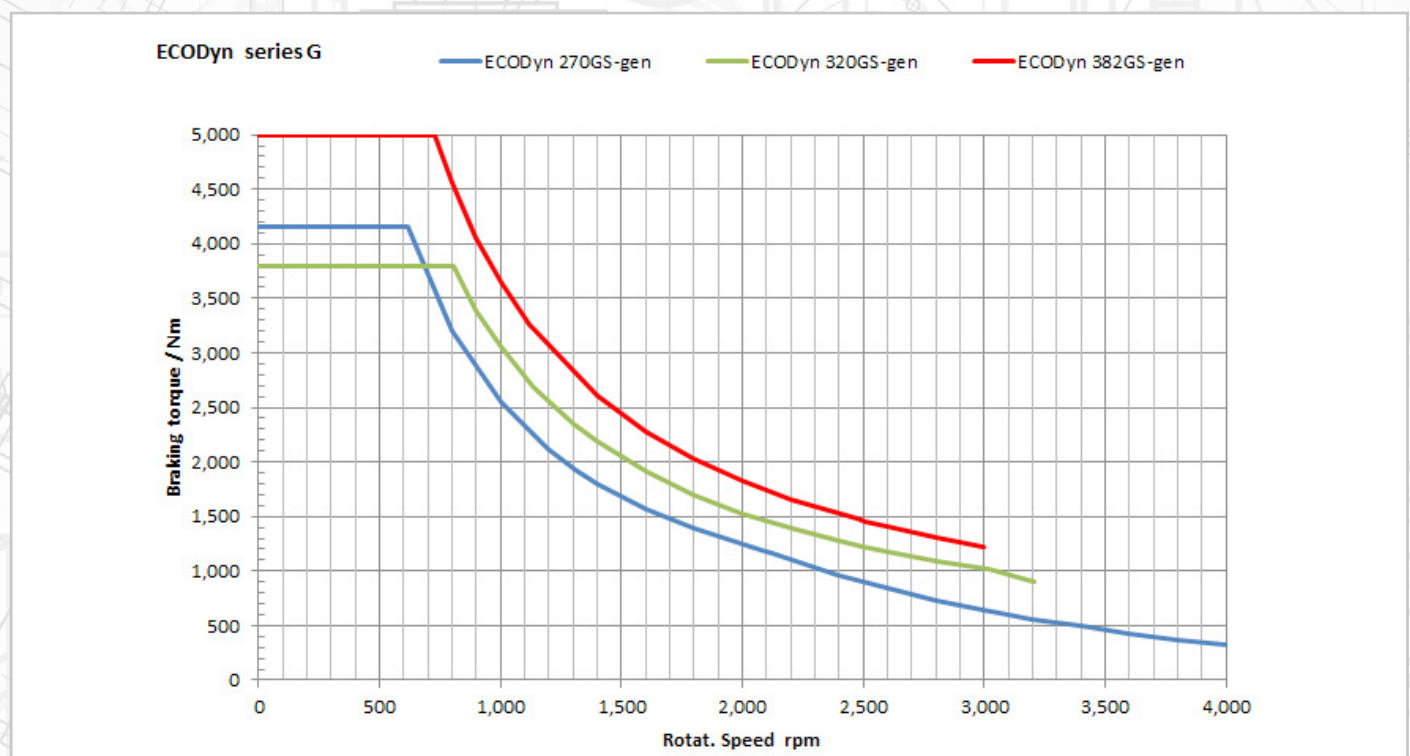
The drive and load machines of the **ECODyn G** series are designed for testing drive trains in the electro-mobility sector and for transmission development, which cover them optimally with their high torques. The maximum speed is up to 4000 rpm.

ECODyn module data (generator)		ECODyn 270G	ECODyn 320GS	ECODyn 382GS
nominal voltage	V	380	325	300
nominal power	kW	270	320	382
nominal torque	Nm	4160	3800	5000
rated speed	rpm	615	805	729
maximum speed	rpm	4000	3200	3000
rated current	A	461	664	829
mass moment of inertia	kg m ²	13.03	8.53	10.57
maximum speed gradient (gen) up to nominal speed incl. overload	rpm/s	3659	5105	5417
weight	kg	2300	2300	3000

All motors are available with air cooling or water cooling with air-water heat exchanger (LWW).
Equipped with ROD 436 speed sensor and HBM T40B torque flange.

Special modules with customer-specific data are possible within this standard series.

Torque diagrams generator operation of the G-series



Scope of delivery of the **ECODyn** module:

Basic scope

- Asynchronous machine with torque flange and speed sensor
- Converter system with input rectifier and inverter or
- Multidrive inverter system with common input rectifiers and inverters
- Fully configured as module

Options for the

- Motor: measuring flange HBM T12HP, intermediate frame to reach a desired installation height, shaft protection, adjustment device
- Converter: Profi-Bus, Profinet, Can-Bus, Ethernet and EtherCAT modules, cable entry Inverter from above, base for inverter 100 / 200 mm
- Shielded power cable and signal cable between machine - inverter
- Speed-controlled fan for machine (included in the inverter as standard)
- Assembly and commissioning

Competent support in applying for and implementing fuel tax savings on the basis of the Energy Tax Act

Use the innovative **ECODyn** modules to your advantage. We will be happy to advise you on your specific application and provide you with a qualified offer.

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