

# KinetiMax HPD Brushless DC Outer-Rotor Motors High Power Density, Frameless Stator-Rotor Sets

62 to 125 mm diameter, 0.16 to 6.30 Nm continuous torque, up to 1100 Watts output

**NEW**



The KinetiMax HPD (KM HPD) range of outer-rotor brushless DC motors comes in frameless stator-rotor part sets. Available in six frame sizes and three stack-heights each, the HPD series enables you to select an optimum configuration with an exact performance fit for your application.

These compact kit motors offer an ideal solution especially where total motor length is crucial in space-constrained applications.

Their large stator inner diameter makes integration of oversized ball bearing possible, and the large clear aperture inner diameter permits cabling to pass through the motor.

The KM HPD's excellent high torque-to-weight ratio is essential in applications where weight is critical. And with an efficiency ranging from 82% to 91% in a wide speed-torque range, the KinetiMax HPD frameless motors are ideal for battery-fed applications, where they help maximize the running time per battery charge.

Their low cogging torque combined with high peak torque improves motor behavior in servo applications.

## Features & Benefits

- 8 different windings for optimal voltage/current supply selection (identified by letters C till K)
- Rated torque 0.16 to 6.30 Nm
- High torque-to-weight ratio
- Excellent efficiency from 82% up to 91% over a wide range around the nominal working point

## Options & Accessories

- Hall commutation sensor board
- Temperature sensor mounted on stator
- Smaller hole in rotor
- High balancing class of rotor

## Typical Applications

- Automated guided vehicles (AGVs)
- Robotics (arms, joints)
- Handheld hydraulic power tools
- Material handling systems
- Medical equipment
- Rotary actuators
- Gimbals

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## Specifications

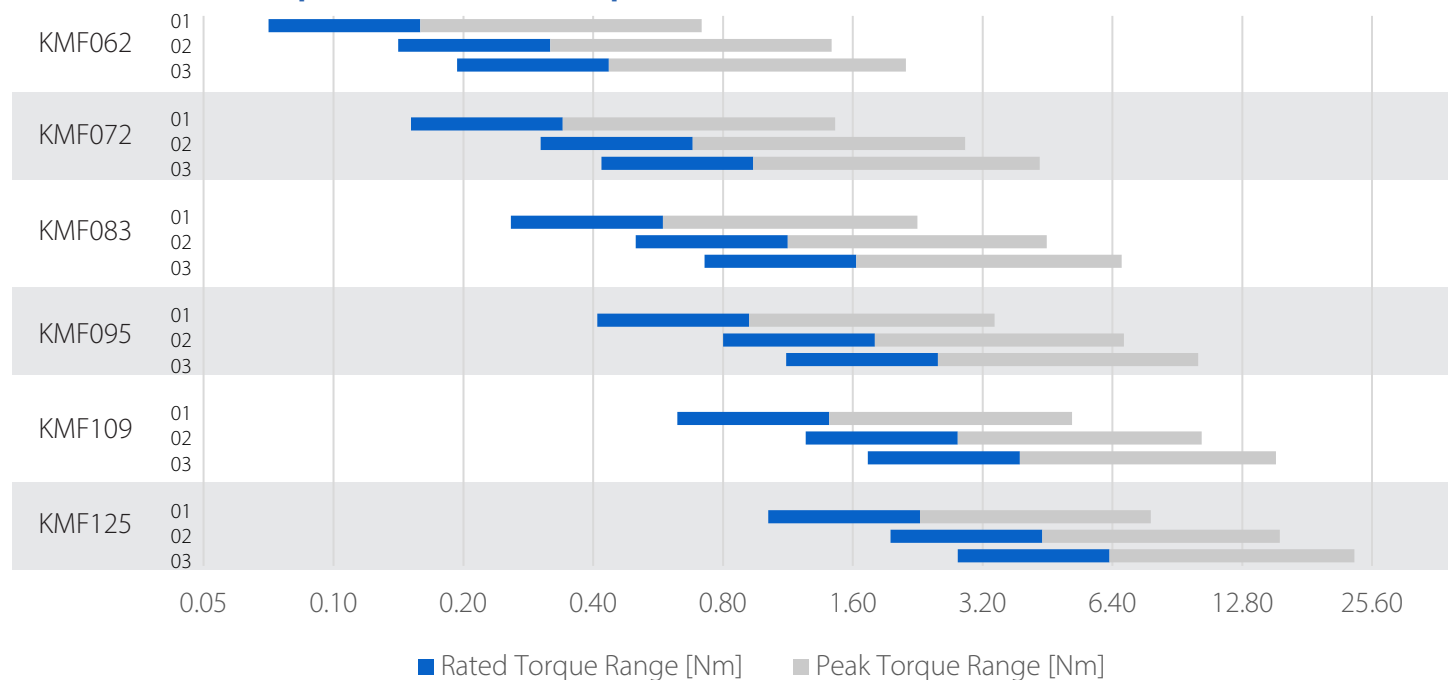


		KMF062			KMF072			KMF083		
		01	02	03	01	02	03	01	02	03
Stack height										
Rated Output Power	Watt	96	125	140	160	220	250	270	310	400
Rated Speed	RPM	5700	3600	3100	4600	3000	2500	4300	2500	2400
Rated Torque	Nm	0,16	0,32	0,44	0,34	0,68	0,94	0,58	1,13	1,63
Peak Torque	Nm	0,64	1,29	1,93	1,31	2,61	3,92	2,00	4,00	6,00
Efficiency	%	82	84	84	85	86	87	87	88	88
Rotor Inertia (x10-6) - large holl	kgm <sup>2</sup>	44	62	80	85	122	159	208	293	377
Rotor Inertia (x10-6) - small holl	kgm <sup>2</sup>	46	64	83	90	127	163	219	304	388
Max Winding Temperature	°C	160			160			160		
Number of pole pairs		15			15			15		
Weight	kg	0,15	0,22	0,29	0,21	0,32	0,43	0,34	0,51	0,69
Rotor I.D. [V] <sup>2</sup>		16	16	16	16	16	16	20	20	20
Rotor I.D. [W] <sup>2</sup>		38	38	38	44	44	44	51	51	51
Rotor O.D. [Z] <sup>2</sup>	mm	61,9			72,3			83,9		
Stator I.D. [Y] <sup>2</sup>	mm	32,0			39,0			45,5		
Total height [X] <sup>2</sup>	mm	23,1	29,1	35,0	23,5	30,5	37,5	26,5	34,5	42,5

<sup>(1)</sup> See the dimensions in the drawing on the next page.

**We refer you to the datasheet to view the full data per frame size and stack length, for each available winding.**

## Performance Comparison - Rated Torque [Nm]

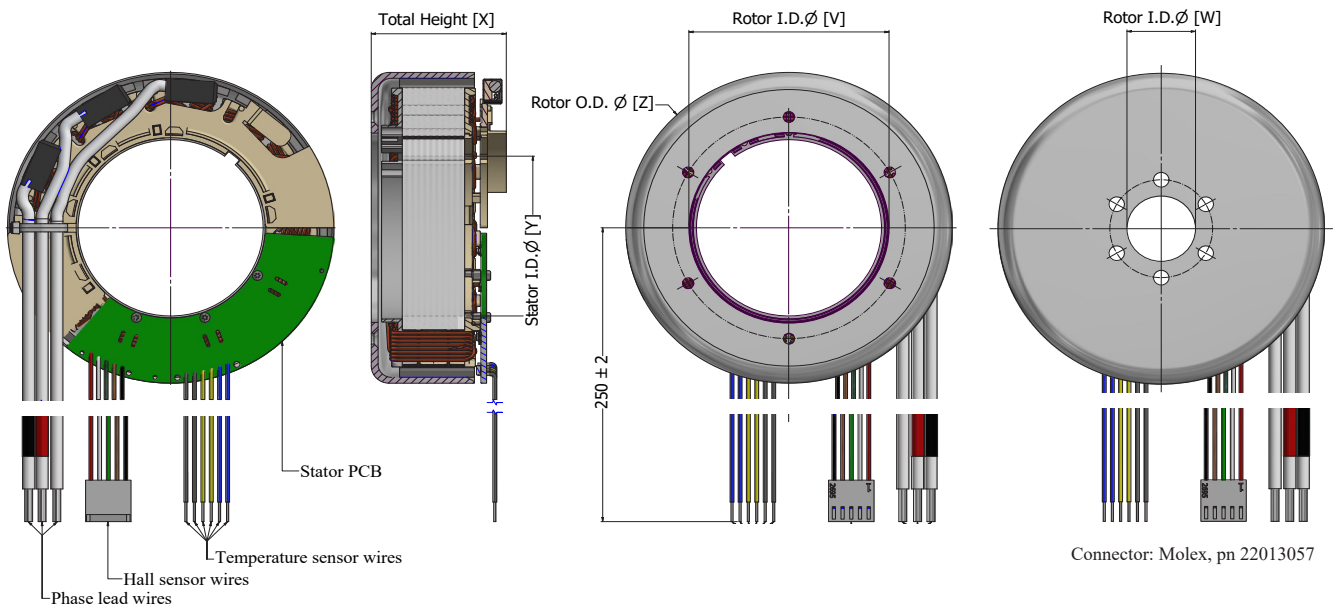




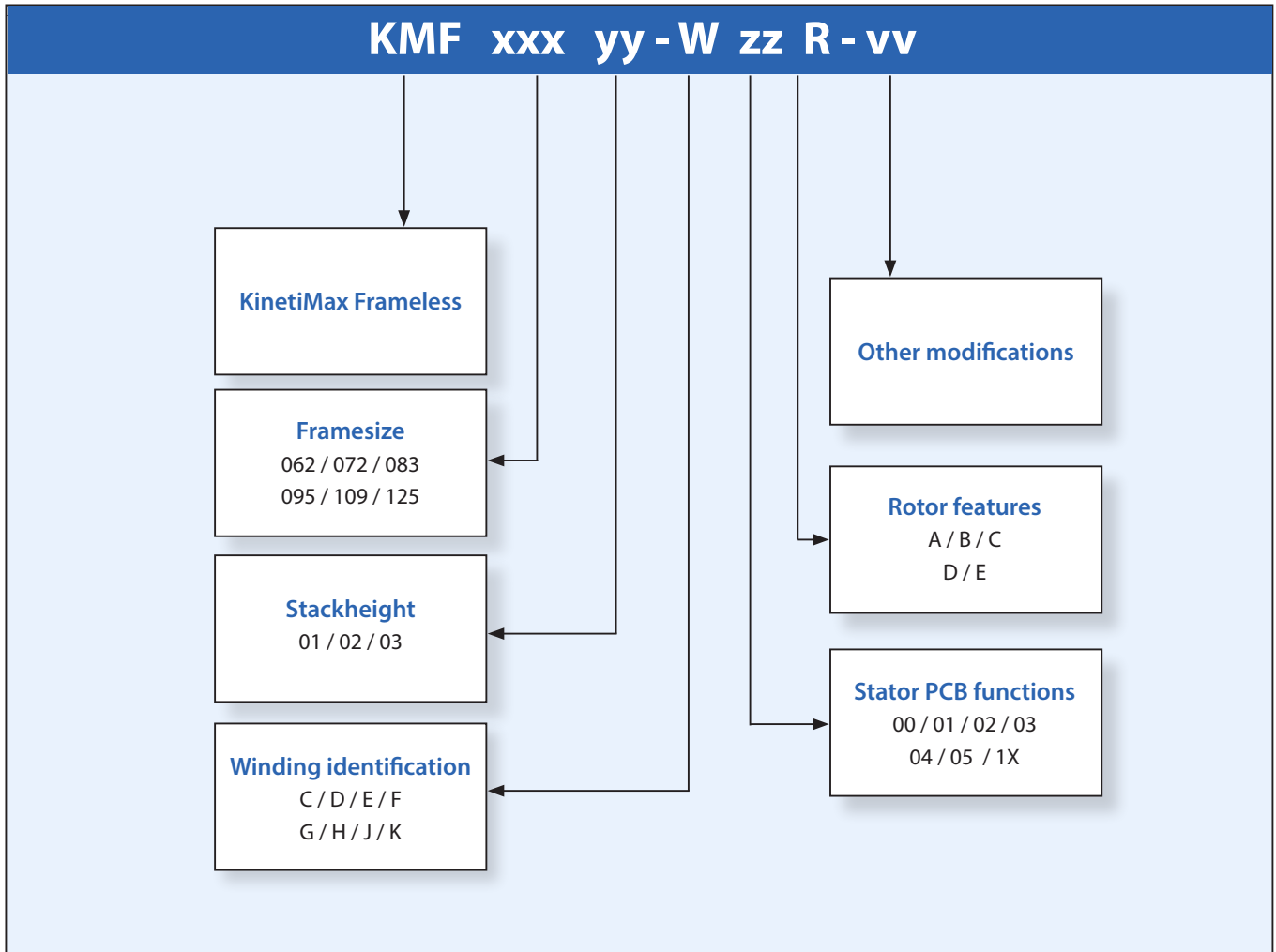
KMF095			KMF109			KMF125				
01	02	03	01	02	03	01	02	03		Stack height
325	422	596	508	627	819	791	1063	1156	Watt	Rated Output Power
3600	2200	3000	3200	2200	1900	3400	2200	1670	RPM	Rated Speed
0,92	1,80	2,52	1,41	2,80	3,90	2,29	4,40	6,30	Nm	Rated Torque
3,00	6,00	9,00	4,53	9,06	13,59	6,83	13,67	20,50	Nm	Peak Torque
88	89	89	89	90	90	90	90	91		Efficiency
348	494	641	783	1108	1432	1338	1906	2437	kgm <sup>2</sup>	Rotor Inertia (x10-6) - large holl
366	512	659	822	1147	1471	1410	1978	2546		Rotor Inertia (x10-6) - small holl
160			160			160			°C	Max Winding Temperature
15			15			15				Number of pole pairs
0,45	0,69	0,93	1,00	1,38	1,76	1,08	1,61	2,13	kg	Weight
20	20	20	20	20	20	26	26	26		Rotor I.D. [V] <sup>2</sup>
58	58	58	67	67	67	77	77	77		Rotor I.D. [W] <sup>2</sup>
95,2			109,7			125,2			mm	Rotor O.D. [Z] <sup>2</sup>
54,0			62,5			73,0			mm	Stator I.D. [Y] <sup>2</sup>
28,0	36,5	45,5	32,0	43,0	54,0	33,5	46,0	57,5	mm	Total height [X] <sup>2</sup>

We refer you to the datasheet to view the full data per frame size and stack length, for each available winding.

## Outline Dimensions



## Commercial Part Numbering KMF HPD Stator-rotor sets



ZZ	Stator PCB functions
00	No PCB
01	PCB with 3 Hall sensors
02	PCB with 1 Temperature sensor only
03	PCB with 3 Hall sensors and 1 Temperature sensor
04	PCB with 3 Temperature sensors only
05	PCB with 3 Hall sensors and 3 temperature sensors
1X	Starting with 1 are custom PCB's

R	Rotor features
A	Large bore hole, G40 balancing class
B	Small bore hole, G40 balancing class
C	Large bore hole, G16 balancing class
D	Small bore hole, G16 balancing class
E	Custom rotor or balancing

With **Other modifications** are meant custom added parts to stator or rotor like a stator bracket, other leadwires with connector or a rotor nave/shaft etc.



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