Heidrive

A Company of Allied Motion

HMD Next Generation- Servo motors with planetary gears

HeiMotion Dynamic

Introduction

As additional extension to the HeiMotion servo range the HeiMotion Dynamic Next Generation series is now supplemented by compact directly mounted gears with diameters from 60 mm to 100 mm. The modular flanges allow besides the standard combinations even to combine different motor and gear sizes to realize special requirements such as high radial loads or various mounting types on the machine.
Since the advantages of the HMD Next Generation motors, such as the further improved dynamics and the more compact design compared to their predecessors, were to be supplemented even further, the focus of the design requirements was on reducing the overall length of the gear and keeping noise to a minimum.
The elimination of the clamp coupling and the more precise connection of the sun gear allowed the noise level to be reduced by up to 6 dB. The 1-stage gear unit is available in gear ratios of 1 to 10, and the dual-stage model is available in gear ratios from 9 to 64. Other advantages of direct mounting include the low mass moment of inertia and the light weight.

The HeiMotion Dynamic Next Generation motors are available in four standard frame sizes:

- ☐ 60 mm - HMD06
- ☐ 80 mm - HMD08
- ☐ 100 mm - HMD10
- ☐ 130 mm - HMD13

... and can be combined with the following gear unit sizes:

- ☐ E06 / E07 / P07 / H06 / F06 / V06
- ☐ E06 / E07 / E08 / E09 / P07 / P09 / H06 / H08 / F06 / F09 / V06 / V09
- ☐ E08 / E09 / E10 / P09 / H08 / F09 / V09 / V10
- ☐ E10 / V10

The features of the gear unit at a glance:

- Low backlash
- High output torques
- High efficiency
- Low noise
- The highest standards for quality
- Flexible mounting position
- Lifetime lubrication
- Same rotating direction of gear unit and motor
- Modular design with additional options available upon request

Advantages of the HMD Next Generation motor-gear unit combination:

- Short length
- Low mass moment of inertia
- Lightweight
- Low noise
- High efficiency

Contents

General information

Drives (motor-gear-combinations)

Order code

HMD08-024-320-30-BPH2MW23E0616

Frame/flange size

60 mm	→	06
80 mm	→	08
100 mm	→	10
130 mm	→	13

Stall torque

1.1 Nm	→	011
1.9 Nm	→	019
2.4 Nm	→	024
2.6 Nm	→	026
3.2 Nm	→	032
3.9 Nm	→	039
4.2 Nm	→	042
5.7 Nm	→	057
7.6 Nm	→	076
10.5 Nm	→	105
13.3 Nm	→	133
19.0 Nm	→	190
24.5 Nm	→	245

DC bus voltage

24 V	→	024
48 V	→	048
320 V	→	320
560 V	→	560

Rated speed

2,000 rpm	→	20
3,000 rpm	→	30
3,600 rpm	→	36
5,000 rpm	→	50
5,500 rpm	→	55
6,000 rpm	→	60

Gear type (p. 3)

Economy series	→	E[1]
Powerful economy	→	P
Heavy duty	→	H
Flange output	→	F
Vehicle optimized	→	V

Gear size

60 mm	→	06
60/70 mm	→	07
80 mm	→	08
80/90 mm	→	09
100 mm	→	10

Ratio

i=3	→	03
i=4	→	04
i=5	→	05
i=7	→	07
i=8	→	08
i=10	→	10
i=9	→	09
i=12	→	12
i=15	→	15
i=16	→	16
i=20	→	20
i=25	→	25
i=32	→	32
i=40	→	40
i=64	→	64

Options

Without brake	0XXXXXXX
With brake	BXXXXXXX
Without feather key (Gear)	X0XXXXXX[2]
With feather key (Gear)	XPXXXXXX[2]
Resolver	XXR1PXXX
Resolver safely mounted	XXRAPXXX
HES 1 (1.0 V_{p-p})	XXM2SXXX
HEM 1 (1.0 V_{p-p} without battery)	XXM1MXXX
HEM 1 (1.0 V_{p-p} with battery)	XXM2MXXX
HES 3	XXM1IXXX
HS 16	XXS1SXXX
HM 16	XXB1MXXX
ECI 1118	XXE1SXXX
EQI 1131	XXE1MXXX
SEK 37	XXH1SXXX
SEL 37	XXH1MXXX
SKS 36	XXH2SXXX
SKS 36S safely mounted	XXHBSXXX
SKM 36	XXH2MXXX
SKM 36S safely mounted	XXHBMXXX
SRS 50	XXH3SXXX
SRM 50	XXH3MXXX
EES 37	XXD1SXXX
EES 37-2 safely mounted	XXDASXXX
EEM 37	XXD1MXXX
EEM 37-2 safely mounted	XXDAMXXX
EKS 36	XXD2SXXX
EKS 36-2 safely mounted	XXDBSXXX
EKM 36	XXD2MXXX
EKM 36-2 safely mounted	XXDBMXXX
CKS 36	XXI1SXXX
M23 angled	XXXXXW23
Y-Tec	XXXXXY17
I-Tec	XXXXXI17
Cable outlet 1.5m[3]	XXXXXK15
Cable outlet 5m[3]	XXXXXK50
Terminal box[3]	XXXXXKB0
Terminal box[3]	XXXXXKB2
Terminal box[3]	XXXXXKA0
Terminal box[3]	XXXXXKA2

1) E06, E08, E10 with round mounting flange / E07 and E09 with square mounting flange (see also explanations on page 3).
2) Feather key option only available for E, P and H gear units. Details and definitions see page 68.
3) Only on request.

Example: HMD08-024-320-30-BPH2MW23E0616[1)]

- Frame/flange size motor 80 mm
- Stall torque 2.4 Nm
- DC bus voltage 320 V
- Rated speed 3,000 rpm

Options:
- with brake
- with feather key (Gear)
- Encoder SKM36
- Angled connector M23

Gear data:
- Type - Economy
- Size - 60 mm
- Ratio - 16

1) For the exact motor data, please refer to our main catalog "HeiMotion Dynamic Next Generation - Servo drive systems"

HMD ▢▢-▢▢▢-▢▢▢-▢▢-▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢

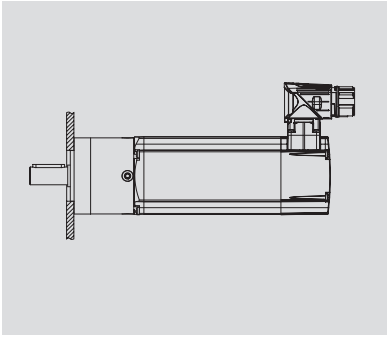
- Frame/flange size motor
- Stall torque
- DC bus voltage
- Rated speed
- Drive options
- Gear type
- Angular gearbox
- Ratio
- Gear size

Option angular gearbox see from page 69

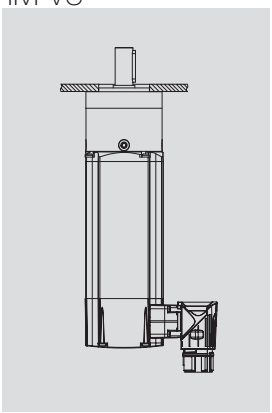
Mounting position

Please note: Specify the mounting position (IM = International Mounting) when placing an order! The following mounting positions comply with the DIN EN 600 34-7 standard (designation of machines with horizontal/ vertical shafts in a flanged design).

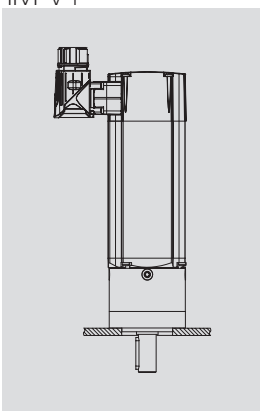
IM B5



IM V3

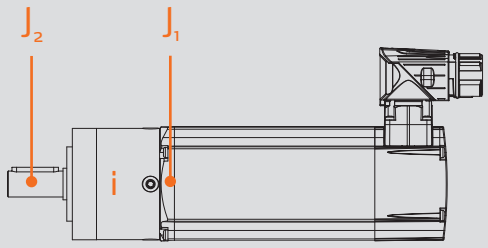


IM V1



General information

Calculation of the moments of inertia



Formula: $J_2 = J_1 \cdot i^2$

- The moments of inertia specified in this catalog refer to the motor shaft or the geared drive (J_1)
- Indicated is the total moment of inertia of the motor, the gear and (if mounted) the brake
- Designation moment of inertia: J_1, unit: kg-cm^2
- Calculation of the moment of inertia of the drive side (J_2), see formula

Abbreviations and definitions

Abbr.	Unit	Explanation
n_n	[rpm]	Rated speed of the motor
n_{out}	[rpm]	Output shaft speed at the gear unit
M_0	[Nm]	Stall torque of the motor-gear-unit, taking into account the gear ratio and the gear efficiency (see ambient conditions and technical characteristics)
M_n	[Nm]	Rated torque of the motor-gear-unit, taking into account the gear ratio and the gear efficiency (see ambient conditions and technical characteristics) as a function of the rated speed of the motor
M_{max}	[Nm]	Maximum torque of the motor-gear-unit, taking into account the gear ratio and the gear efficiency (see ambient conditions and technical characteristics)
$M_{G, n}$	[Nm]	Permissible rated torque of the gear
$M_{G, max}$	[Nm]	Permissible maximum torque of the gear for 30,000 rotations of the output shaft
J_1	[kg-cm^2]	Mass moment of inertia incl. gear unit and motor, as well as brake (if mounted)
i	[-]	Gear ratio
L	[mm]	Complete length of the motor-gear-unit
m	[kg]	Complete weight of the motor-gear-unit

Ambient conditions and technical characteristics

Service life at the rated operating conditions	20,000 h *
Minimum operating temperature	- 10 °C
Maximum operating temperature	40 °C
Maximum gear temperature	90 °C *
Lubrication	Lifetime lubrication
Coating motor and gear	Black top coat, RAL 9005
Protection class motor / gear (E, P, F)	IP65 / IP54
Protection class motor / gear (H, V)	IP65 / IP65

* Depending on application and environmental conditions

Drive selection

You can find overview diagrams to help you select your individualized drive on the following pages of the catalog. There are two different ways of selecting a motor and/or gear unit.

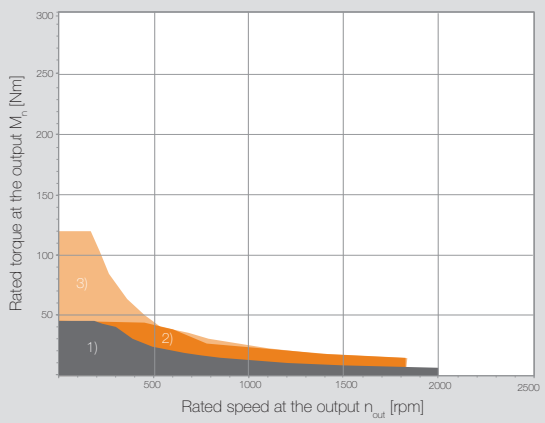
1. Drive selection by radial / axial forces (F_r , F_a)

Motor types	F_r [N]	F_a [N]
HMD06 E06 / HMD08 E06	400	500
HMD06 E07 / HMD08 E07	900	1,000
HMD08 E08 / HMD10 E08	750	1,000
HMD08 E09 / HMD10 E09	2,050	2,500
...	...	...

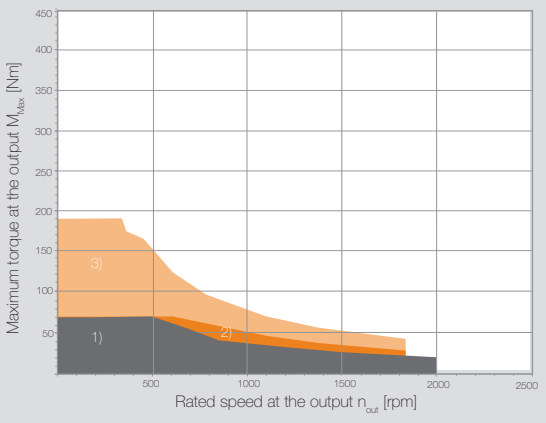
Permissible values and design conditions for each gear unit can be found on page 11. Here yi will also find information on backlash and torsional stiffness.

2. Drive selection by torque

2.1 Rough selection of the necessary size using the graphical preselection diagrams (see p. 8 / 9)



a. By rated torque



b. By peak torque

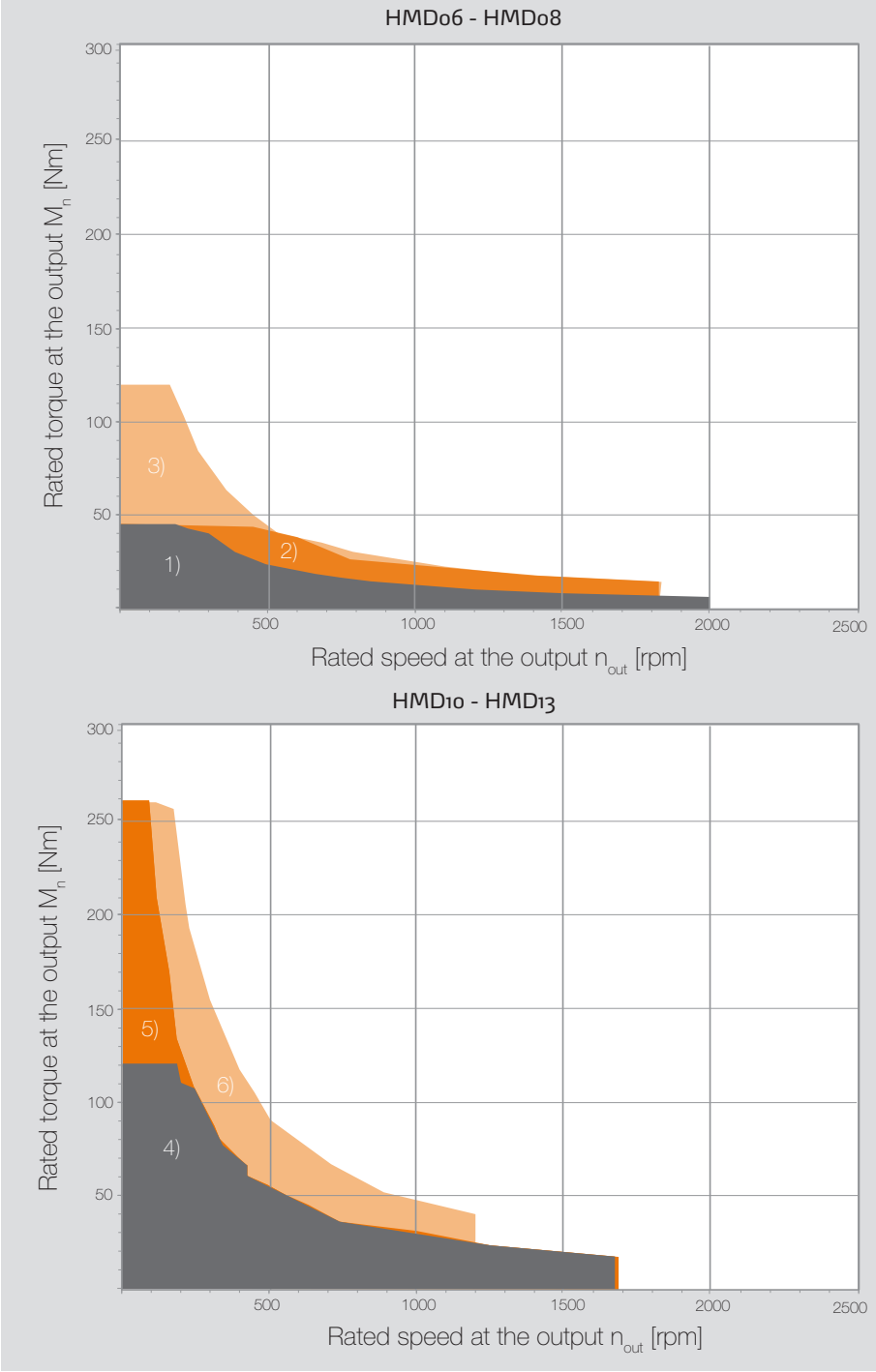
2.2 Detailed selection on the relevant pages about drives using size-specific selection tables to find the exact stall, rated and peak torques needed. The maximum torque of each gear unit is also shown in this section.

The gear unit efficiency and gear unit ratio are already taken into account in the diagrams. For the diagrams, the torques of the motor and the gear unit were compared and the maximum achievable values were used.

2.3 Determining the motor options such as connectors, brakes, etc. using the „HMD Next Generation- servo drive systems“ catalog.

Graphical preselection diagrams

Rated torque M_n of HMD06 - HMD13



1)	HMD**06** E06	p. 12
	HMD**06** E07	p. 14
	HMD**06** P06	p. 32
	HMD**06** H06	p. 40
	HMD**06** F06	p. 48
	HMD**06** V06	p. 56
2)	HMD**08** E06	p. 16
	HMD**08** E07	p. 18
	HMD**08** P07	p. 34
	HMD**08** H06	p. 42
	HMD**08** F06	p. 50
	HMD**08** V06	p. 58
3)	HMD**08** E08	p. 20
	HMD**08** E09	p. 22
	HMD**08** P09	p. 36
	HMD**08** H08	p. 44
	HMD**08** F09	p. 52
	HMD**08** V09	p. 60

4)	HMD**10** E08	p. 24
	HMD**10** E09	p. 26
	HMD**10** P09	p. 38
	HMD**10** H08	p. 46
	HMD**10** F09	p. 54
	HMD**10** V09	p. 62
5)	HMD**10** E10	p. 28
	HMD**10** V10	p. 64
6)	HMD**13** E10	p. 30
	HMD**13** V10	p. 66

Gear types

E-gear
(Economy series)

P-gear
(Powerful economy)

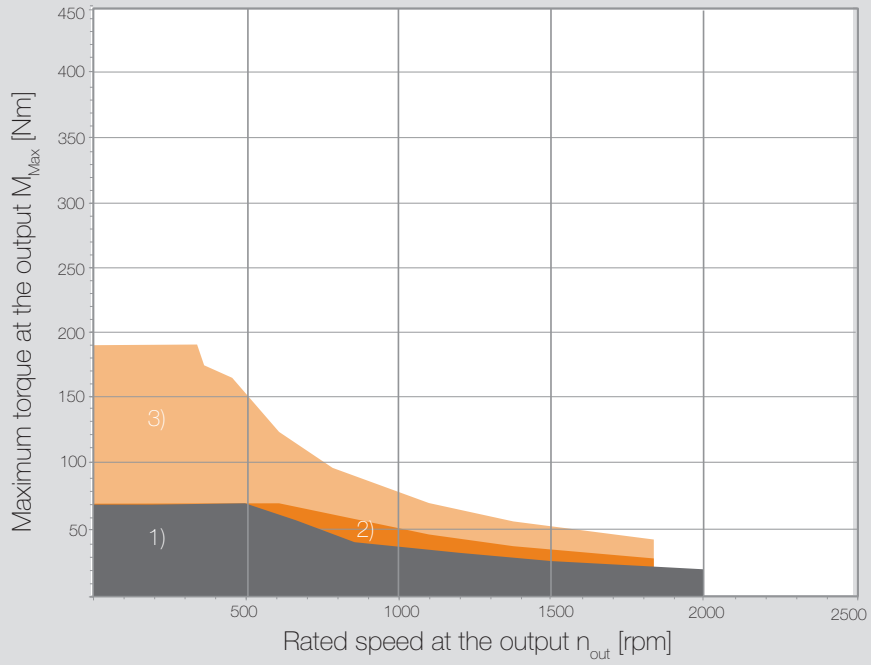
H-gear
(Heavy duty)

F-gear
(Flange output)

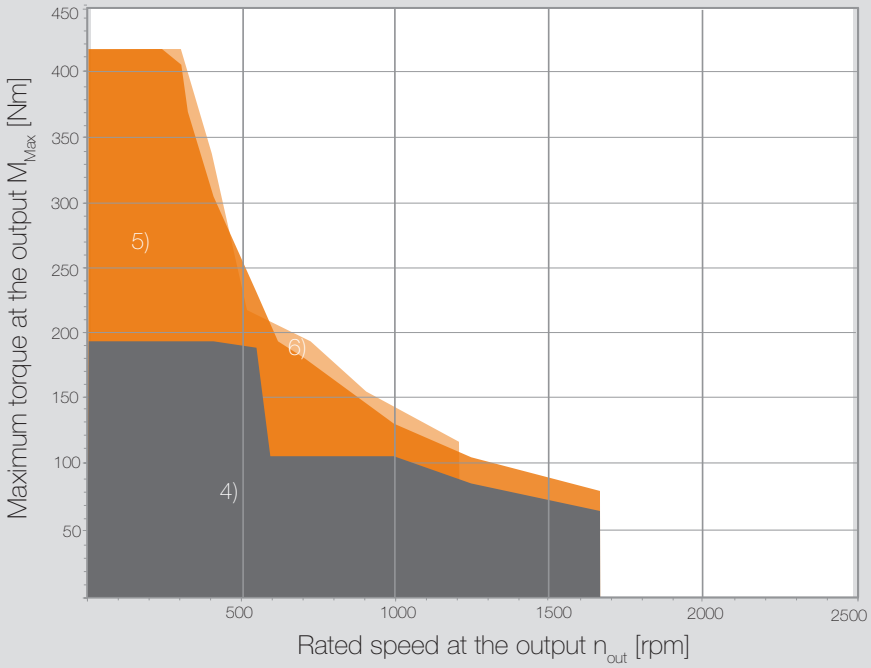
V-gear
(Vehicle optimized)

Maximum torque M_{max} of HMD06 - HMD13

HMD06 - HMD08



HMD10 - HMD13



1)	HMD**06** E06	p. 12
	HMD**06** E07	p. 14
	HMD**06** P06	p. 32
	HMD**06** H06	p. 40
	HMD**06** F06	p. 48
	HMD**06** V06	p. 56
2)	HMD**08** E06	p. 16
	HMD**08** E07	p. 18
	HMD**08** P07	p. 34
	HMD**08** H06	p. 42
	HMD**08** F06	Pp. 50
	HMD**08** V06	p. 58
3)	HMD**08** E08	p. 20
	HMD**08** E09	p. 22
	HMD**08** P09	p. 36
	HMD**08** H08	p. 44
	HMD**08** F09	p. 52
	HMD**08** V09	p. 60

4)	HMD**10** E08	p. 24
	HMD**10** E09	p. 26
	HMD**10** P09	p. 38
	HMD**10** H08	p. 46
	HMD**10** F09	p. 54
	HMD**10** V09	p. 62
5)	HMD**10** E10	p. 28
	HMD**10** V10	p. 64
6)	HMD**13** E10	p. 30
	HMD**13** V10	p. 66

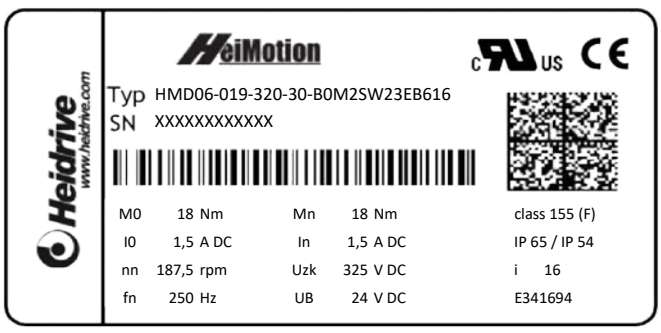
Technical data and additional information

Technical data motors

Motor description	Rated speed [rpm]	Stall torque [Nm]	Nominal torque [Nm]	Peak torque [Nm]
HMD06-011...	3000	1	1	2.5
	6000	1	1	2.5
HMD06-019...	3000	1.9	1.7	4.8
	6000	1.9	1.45	4.8
HMD06-026...	3000	2.6	2.5	6.5
	6000	2.6	2	6.5
HMD08-024...	3000	2.4	2.3	6
	5500	2.4	2.1	6
HMD08-032...	3000	3.2	3	8
	5500	3.2	2.6	8
HMD08-042...	3000	4.2	3.9	10.5
	5500	4.2	3.4	10.5
HMD08-057...	3000	5.7	5.3	14.3
	5500	5.7	4.3	14.3
HMD10-039-...	3000	3.9	3.6	9.8
	5000	3.9	3.2	9.8
HMD10-057-...	3000	5.7	5.2	14.3
	5000	5.7	4	14.3
HMD10-076-...	3000	7.6	6.5	19
	5000	7.6	4.8	19
HMD10-105-...	3000	10.5	8.6	26.3
	5000	10.5	5.5	26.3
HMD13-133-...	2000	13.3	11.5	33.3
	3600	13.3	9	33.3
HMD13-190-...	2000	19	16	47.5
	3600	19	11.2	47.5
HMD13-245-...	2000	24.5	20.5	61.3
	3600	24.5	13.3	61.3

Type plate information

The torques and numbers on the type plate are calculated from the motor data, taking into account the gear ratio and the efficiency of the gear stages. If the permissible torques of the gear units are exceeded, the controller must derate the currents for the standstill and nominal torque to the specified value. There may be deviating values for the standstill torque or the rated torque for slowly rotating coils between the catalog and the type plate for versions with angular steps, since the catalog makes a more detailed distinction with regard to speed-dependent limit values for this option. The speed indicated on the type plate results from the rated motor speed and the gear ratio. It should be noted that the thermally permissible limit speed may differ in some cases.



Technical data gears

Gear type	Radial force [N][3]	Axial force [N][3]	Gear backlash [arcmin] at the output		Torsional stiffness [Nm /arcmin] [4]		Average thermal operating speed [rpm] [5]
			1-stage	2-stage	1-stage	2-stage	
…E06[1]	400	500	< 10	< 12	2.2 - 2.7	2.3 - 2.6	4500
…E07[1]	900	1000	< 10	< 12	3.1 - 4.1	3.3 - 3.9	4500
…E08[1]	750	1000	< 7	< 9	8.2 - 10.0	7.9 - 9.8	4000
…E09[1]	2050	2500	< 7	< 9	9.8 - 12.6	10.1 - 13.4	4000
…E10[1]	1200	2100	< 7	< 9	16.7 - 20.5	17.5 - 20.5	3500
…P07[1]	1050	1350	< 10	< 12	4.1 - 6.4	4.6 - 5.8	4500
…P09[1]	1900	2000	< 7	< 9	11.6 - 15.6	11.0 - 15.1	4000
…H06[1]	3200	4400	< 10	< 12	3.3 - 4.5	3.5 - 4.2	4500
…H08[1]	5500	6400	< 7	< 9	10.0 - 12.7	9.5 - 12.4	4000
…F06[2]	550	1200	< 10	< 12	6.4 - 14.9	7.5 - 12.0	4500
…F09[2]	1400	3000	< 7	< 9	22.0 - 44.0	20.0 - 40.5	4000
…V06[2]	2300	2850	-	< 12	-	7.3 - 11.6	4500
…V09[2]	4100	5450	-	< 9	-	19.5 - 39.5	4000
…V10[2]	5150	6450	-	< 9	-	52.0 - 97.0	3500

1) Forces referred to the center of the output shaft.
2) Forces referred to end face of output shaft contour.
3) Permissible for nominal service life 20,000h at n_{out} = 100rpm with application factor Ka=1 and radial or axial force not applied simultaneously.
4) Values dependent on transmission ratio.
5) Permissible for S1 operation and rated torque, exept listed gear ratios in the following table.

Deviation from average thermal operating speed

Transmission	i = 3	i = 4	i = 5	i = 7	i = 9	i = 12	i = 15	i = 16
…E06	-	-	-	-	-	-	-	-
…E07	4200	4300	-	-	-	-	-	-
…E08	2700	2500	3000	-	3050	3750	-	-
…E09	2400	2350	2800	-	2950	3650	-	-
…E10	2550	2500	2500	-	2650	2600	3200	3100
…P07	3600	4100	-	-	-	-	-	-
…P09	2300	2600	3200	-	3400	-	-	-
…H06	2450	2800	3300	-	4100	-	-	-
…H08	1900	1950	2400	3900	2800	3500	-	-
…F06	3200	3400	3900	-	4400	-	-	-
…F09	2100	2100	2550	-	2800	3450	-	-
…V06	-	-	-	-	-	-	-	-
…V09	-	-	-	-	3400	-	-	-
…V10	-	-	-	-	2500	2900	-	-

Motor type HMD06-011 /-019 /-026
Gear E06

Stall, rated and peak torque - M [Nm]

				HMD06-011-...E06[1]				HMD06-019-...E06[1]				Gear E06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	2.9	2.9	2.9	7.4	5.0	4.3	5.6	14.1	17	27.5
	4	750	1500	3.9	3.9	3.9	9.8	6.7	5.7	7.4	18.8	23	37
	5	600	1200	4.9	4.9	4.9	12.3	8.3	7.1	9.3	23.5	29	46
	7	429	857	6.8	6.8	6.8	17.0	11.5	9.8	12.9	32.6	25	40
	8	375	750	7.8	7.8	7.8	19.4	13.2	11.3	14.7	37.2	18	29
	10	300	600	9.6	9.6	9.6	24.0	16.3	13.9	18.2	46.1	15	24
2-sttage	9	333	667	8.7	8.7	8.7	21.8	14.8	12.7	16.6	41.9	44	70
	12	250	500	11.5	11.5	11.5	28.8	19.6	16.7	21.9	55.3	44	70
	15	200	400	14.4	14.4	14.4	36.0	24.5	20.9	27.4	69.1	44	70
	16	188	375	15.4	15.4	15.4	38.4	26.1	22.3	29.2	73.7	44	70
	20	150	300	19.2	19.2	19.2	48.0	32.6	27.8	36.5	92.2	44	70
	25	120	240	23.8	23.8	23.8	59.4	40.4	34.4	45.1	114.0	40	64
	32	94	188	30.4	30.4	30.4	76.0	51.7	44.1	57.8	145.9	44	70
	40	75	150	37.6	37.6	37.6	94.0	-	54.5	71.4	180.5	40	64
	64	47	94	55.7	55.7	55.7	139.2	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

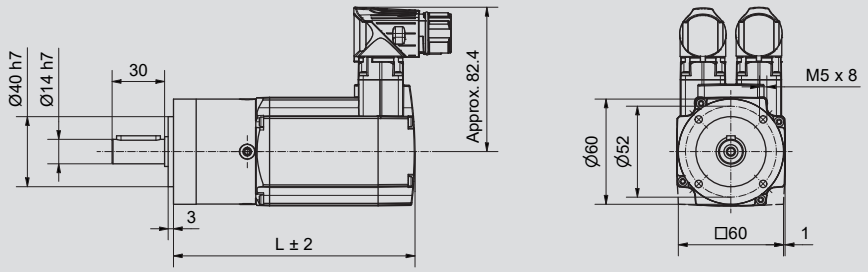
				HMD06-026-...E06[1]				Gear E06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	7.4	5.9	7.6	19.1	17	27.5
	4	750	1500	9.8	7.8	10.2	25.5	23	37
	5	600	1200	12.3	9.8	12.7	31.9	29	46
	7	429	857	17.0	13.6	17.7	44.1	25	40
	8	375	750	19.4	15.5	20.2	50.4	18	29
	10	300	600	-	19.2	25.0	62.4	15	24
2-stage	9	333	667	21.8	17.5	22.7	56.7	44	70
	12	250	500	28.8	23.0	30.0	74.9	44	70
	15	200	400	36.0	28.8	37.4	93.6	44	70
	16	188	375	38.4	30.7	39.9	99.8	44	70
	20	150	300	48.0	38.4	49.9	124.8	44	70
	25	120	240	59.4	47.5	61.8	154.4	40	64
	32	94	188	-	60.8	79.0	197.6	44	70
	40	75	150	-	-	-	-	40	64
	64	47	94	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15% applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…E06	without brake	1-stage	138.0	156.0	1.80	2-stage	150.5	168.5	2.00
	with brake		177.5	195.5	2.15		190.0	208.0	2.35
HMD06-019-…E06	without brake		163.0	181.0	2.20		175.5	193.5	2.40
	with brake		202.5	220.5	2.55		215.0	233.0	2.75
HMD06-026-…E06	without brake		193.0	211.0	2.60		205.5	223.5	2.80
	with brake		232.5	250.5	2.95		245.0	263.0	3.15

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-…E06		HMD06-019-…E06		HMD06-026-…E06	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	3.35E-01	+8.90E-02	5.56E-01	+8.90E-02	7.78E-01	+8.90E-02
	4	2.99E-01		5.20E-01		7.42E-01	
	5	2.87E-01		5.08E-01		7.30E-01	
	7	2.76E-01		4.97E-01		7.19E-01	
	8	2.75E-01		4.96E-01		7.18E-01	
	10	2.72E-01		4.93E-01		7.15E-01	
2-stage	9	3.28E-01		5.49E-01		7.71E-01	
	12	3.25E-01		5.46E-01		7.68E-01	
	15	2.83E-01		5.04E-01		7.26E-01	
	16	2.92E-01		5.13E-01		7.35E-01	
	20	2.83E-01		5.04E-01		7.26E-01	
	25	2.82E-01		5.03E-01		7.25E-01	
	32	2.73E-01		4.94E-01		7.16E-01	
	40	2.73E-01		4.94E-01		7.16E-01	
	64	2.73E-01		4.94E-01		7.16E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD06-011 /-019 /-026
Gear E07

Stall, rated and peak torque - M [Nm]

				HMD06-011-...E07[1]				HMD06-019-...E07[1]				Gear E07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	2.9	2.9	2.9	7.4	5.0	4.3	5.6	14.1	17	27.5
	4	750	1500	3.9	3.9	3.9	9.8	6.7	5.7	7.4	18.8	23	37
	5	600	1200	4.9	4.9	4.9	12.3	8.3	7.1	9.3	23.5	29	46
	7	429	857	6.8	6.8	6.8	17.0	11.5	9.8	12.9	32.6	25	40
	8	375	750	7.8	7.8	7.8	19.4	13.2	11.3	14.7	37.2	18	29
	10	300	600	9.6	9.6	9.6	24.0	16.3	13.9	18.2	46.1	15	24
2-stage	9	333	667	8.7	8.7	8.7	21.8	14.8	12.7	16.6	41.9	44	70
	12	250	500	11.5	11.5	11.5	28.8	19.6	16.7	21.9	55.3	44	70
	15	200	400	14.4	14.4	14.4	36.0	24.5	20.9	27.4	69.1	44	70
	16	188	375	15.4	15.4	15.4	38.4	26.1	22.3	29.2	73.7	44	70
	20	150	300	19.2	19.2	19.2	48.0	32.6	27.8	36.5	92.2	44	70
	25	120	240	23.8	23.8	23.8	59.4	40.4	34.4	45.1	114.0	40	64
	32	94	188	30.4	30.4	30.4	76.0	51.7	44.1	57.8	145.9	44	70
	40	75	150	37.6	37.6	37.6	94.0	-	54.5	71.4	180.5	40	64
	64	47	94	55.7	55.7	55.7	139.2	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

				HMD06-026-...E07[1]				Gear E07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	7.4	5.9	7.6	19.1	17	27.5
	4	750	1500	9.8	7.8	10.2	25.5	23	37
	5	600	1200	12.3	9.8	12.7	31.9	29	46
	7	429	857	17.0	13.6	17.7	44.1	25	40
	8	375	750	19.4	15.5	20.2	50.4	18	29
	10	300	600	-	19.2	25.0	62.4	15	24
2-stage	9	333	667	21.8	17.5	22.7	56.7	44	70
	12	250	500	28.8	23.0	30.0	74.9	44	70
	15	200	400	36.0	28.8	37.4	93.6	44	70
	16	188	375	38.4	30.7	39.9	99.8	44	70
	20	150	300	48.0	38.4	49.9	124.8	44	70
	25	120	240	59.4	47.5	61.8	154.4	40	64
	32	94	188	-	60.8	79.0	197.6	44	70
	40	75	150	-	-	-	-	40	64
	64	47	94	-	-	-	-	18	29

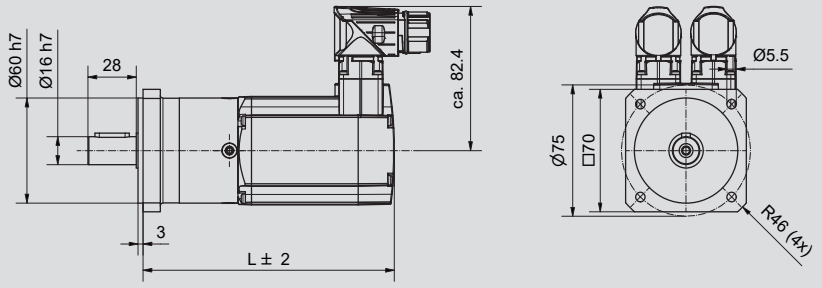
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…E07	without brake	1-stage	146.0	164.0	2.00	2-stage	158.5	176.5	2.20
	with brake		185.5	203.5	2.35		198.0	216.0	2.55
HMD06-019-…E07	without brake		171.0	189.0	2.40		183.5	201.5	2.60
	with brake		210.5	228.5	2.75		223.0	241.0	2.95
HMD06-026-…E07	without brake		201.0	219.0	2.80		213.5	231.5	3.00
	with brake		240.5	258.5	3.15		253.0	271.0	3.35

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-…E07		HMD06-019-…E07		HMD06-026-…E07	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	3.49E-01	+8.90E-02	5.70E-01	+8.90E-02	7.92E-01	+8.90E-02
	4	3.07E-01		5.28E-01		7.50E-01	
	5	2.92E-01		5.13E-01		7.35E-01	
	7	2.79E-01		5.00E-01		7.22E-01	
	8	2.77E-01		4.98E-01		7.20E-01	
	10	2.73E-01		4.94E-01		7.16E-01	
2-stage	9	3.30E-01		5.51E-01		7.73E-01	
	12	3.26E-01		5.47E-01		7.69E-01	
	15	2.84E-01		5.05E-01		7.27E-01	
	16	2.93E-01		5.14E-01		7.36E-01	
	20	2.83E-01		5.04E-01		7.26E-01	
	25	2.82E-01		5.03E-01		7.25E-01	
	32	2.74E-01		4.95E-01		7.17E-01	
	40	2.73E-01		4.94E-01		7.16E-01	
	64	2.73E-01		4.94E-01		7.16E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information".
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear E06

Stall, rated and peak torque - M [Nm]

				HMD08-024-...E06[1]				HMD08-032-...E06[1]				Gear E06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	17	27.5
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	23	37
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	29	46
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	25	40
	8	375	688	17.8	16.3	18.6	46.6	23.3	20.2	24.8	62.1	18	29
	10	300	550	22.1	20.2	23.0	57.6	-	-	-	-	15	24
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	44	70
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	44	70
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	44	70
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	44	70
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	44	70
	25	120	220	54.6	49.9	57.0	142.5	-	-	-	-	40	64
	32	94	172	-	63.8	73.0	182.4	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

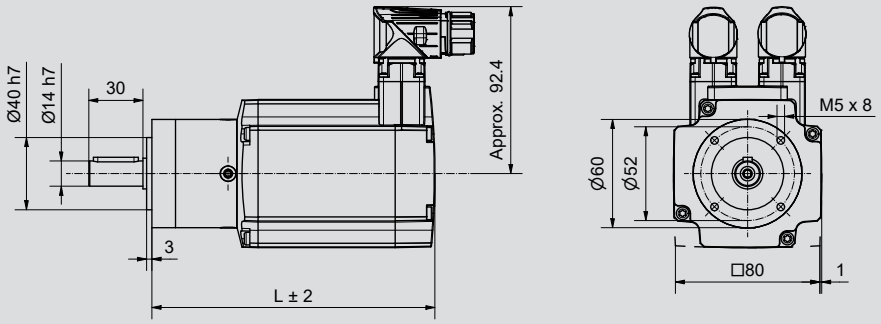
				HMD08-042-...E06[1]				HMD08-057-...E06[1]				Gear E06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	17	27.5
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	23	37
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	29	46
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	25	40
	8	375	688	-	26.4	32.6	81.5	-	-	-	-	18	29
	10	300	550	-	-	-	-	-	-	-	-	15	24
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	44	70
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	44	70
	15	200	367	56.2	49.0	60.5	151.2	-	61.9	82.1	205.9	44	70
	16	188	344	59.9	52.2	64.5	161.3	-	-	-	-	44	70
	20	150	275	-	65.3	80.6	201.6	-	-	-	-	44	70
	25	120	220	-	-	-	-	-	-	-	-	40	64
	32	94	172	-	-	-	-	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…E06	without brake	1-stage	156.8	178.8	3.10	2-stage	169.3	191.3	3.30
	with brake		205.3	227.3	3.75		217.8	239.8	3.95
HMD08-032-…E06	without brake		171.8	193.8	3.50		184.3	206.3	3.70
	with brake		220.3	242.3	4.15		232.8	254.8	4.35
HMD08-042-…E06	without brake		186.8	208.8	3.90		199.3	221.3	4.10
	with brake		235.3	257.3	4.55		247.8	269.8	4.75
HMD08-057-…E06	without brake		216.8	238.8	5.00		229.3	251.3	5.20
	with brake		265.3	287.3	5.65		277.8	299.8	5.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…E06		HMD08-032-…E06		HMD08-042-…E06		HMD08-057-…E06	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	8.67E-01	+2.40E-01	1.20E+00	+2.40E-01	1.53E+00	+2.40E-01	2.19E+00	+2.40E-01
	4	8.31E-01		1.16E+00		1.49E+00		2.15E+00	
	5	8.19E-01		1.15E+00		1.48E+00		2.14E+00	
	7	8.08E-01		1.14E+00		1.47E+00		2.13E+00	
	8	8.07E-01		1.14E+00		1.47E+00		2.13E+00	
	10	8.04E-01		1.13E+00		1.46E+00		2.12E+00	
2-stage	9	8.60E-01		1.19E+00		1.52E+00		2.18E+00	
	12	8.57E-01		1.19E+00		1.52E+00		2.18E+00	
	15	8.15E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.24E-01		1.15E+00		1.48E+00		2.14E+00	
	20	8.15E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.14E-01		1.14E+00		1.47E+00		2.13E+00	
	32	8.05E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.05E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.05E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMDo8-024 /-032 /-042 /-057
Gear Eo7

Stall, rated and peak torque - M [Nm]

				HMDo8-024-...Eo7[1]				HMDo8-032-...Eo7[1]				Gear Eo7[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	17	27.5
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	23	37
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	29	46
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	25	40
	8	375	688	17.8	16.3	18.6	46.6	23.3	20.2	24.8	62.1	18	29
	10	300	550	22.1	20.2	23.0	57.6	-	-	-	-	15	24
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	44	70
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	44	70
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	44	70
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	44	70
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	44	70
	25	120	220	54.6	49.9	57.0	142.5	-	-	-	-	40	64
	32	94	172	-	63.8	73.0	182.4	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

				HMDo8-042-...Eo7[1]				HMDo8-057-...Eo7[1]				Gear Eo7[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	17	27.5
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	23	37
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	29	46
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	25	40
	8	375	688	-	26.4	32.6	81.5	-	-	-	-	18	29
	10	300	550	-	-	-	-	-	-	-	-	15	24
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	44	70
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	44	70
	15	200	367	56.2	49.0	60.5	151.2	-	61.9	82.1	205.9	44	70
	16	188	344	59.9	52.2	64.5	161.3	-	-	-	-	44	70
	20	150	275	-	65.3	80.6	201.6	-	-	-	-	44	70
	25	120	220	-	-	-	-	-	-	-	-	40	64
	32	94	172	-	-	-	-	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

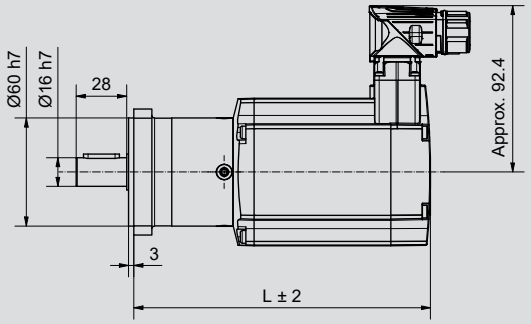
We refer to pages 4 and 5 to compile the type code correctly.

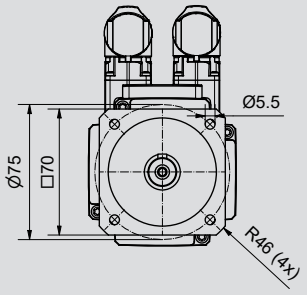
When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68





Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…E07	without brake	1-stage	164.8	186.8	3.30	2-stage	177.3	199.3	3.50
	with brake		213.3	235.3	3.95		225.8	247.8	4.15
HMD08-032-…E07	without brake		179.8	201.8	3.70		192.3	214.3	3.90
	with brake		228.3	250.3	4.35		240.8	262.8	4.55
HMD08-042-…E07	without brake		194.8	216.8	4.10		207.3	229.3	4.30
	with brake		243.3	265.3	4.75		255.8	277.8	4.95
HMD08-057-…E07	without brake		224.8	246.8	5.20		237.3	259.3	5.40
	with brake		273.3	295.3	5.85		285.8	307.8	6.05

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…E07		HMD08-032-…E07		HMD08-042-…E07		HMD08-057-…E07	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	8.81E-01	+2.40E-01	1.21E+00	+2.40E-01	1.54E+00	+2.40E-01	2.20E+00	+2.40E-01
	4	8.39E-01		1.17E+00		1.50E+00		2.16E+00	
	5	8.24E-01		1.15E+00		1.48E+00		2.14E+00	
	7	8.11E-01		1.14E+00		1.47E+00		2.13E+00	
	8	8.09E-01		1.14E+00		1.47E+00		2.13E+00	
	10	8.05E-01		1.14E+00		1.47E+00		2.13E+00	
2-stage	9	8.62E-01		1.19E+00		1.52E+00		2.18E+00	
	12	8.58E-01		1.19E+00		1.52E+00		2.18E+00	
	15	8.16E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.25E-01		1.16E+00		1.49E+00		2.15E+00	
	20	8.15E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.14E-01		1.14E+00		1.47E+00		2.13E+00	
	32	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.05E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.05E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMDo8-024 /-032 /-042 /-057
Gear Eo8

Stall, rated and peak torque - M [Nm]

				HMDo8-024-...Eo8[1]				HMDo8-032-...Eo8[1]				Gear Eo8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	39	62
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	52	83
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	65	104
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	65	104
	8	375	688	17.8	16.3	18.6	46.6	23.3	20.2	24.8	62.1	50	80
	10	300	550	22.1	20.2	23.0	57.6	28.8	25.0	30.7	76.8	38	61
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	117	187
	12	250	458	26.8	24.4	27.9	69.8	34.9	30.3	37.2	93.1	120	192
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	110	176
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	120	192
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	120	192
	25	120	220	54.6	49.9	57.0	142.5	71.3	61.8	76.0	190.0	110	176
	32	94	172	69.9	63.8	73.0	182.4	91.2	79.0	97.3	243.2	120	192
	40	75	138	86.5	79.0	90.2	225.6	112.8	97.8	120.3	300.8	110	176
	64	47	86	131.0	119.6	136.7	341.8	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

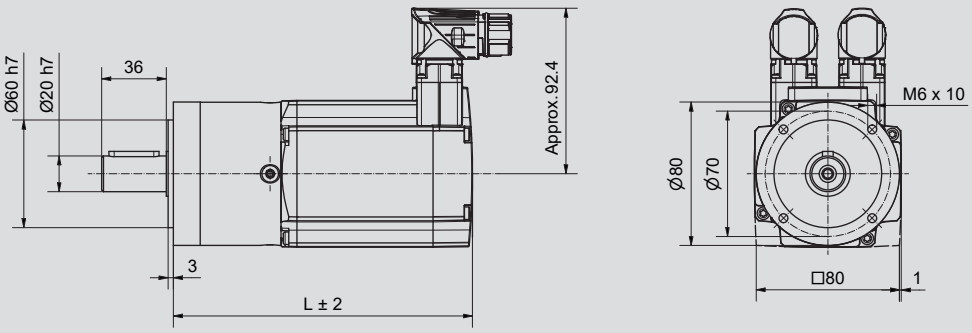
				HMDo8-042-...Eo8[1]				HMDo8-057-...Eo8[1]				Gear Eo8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	39	62
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	52	83
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	65	104
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	65	104
	8	375	688	30.3	26.4	32.6	81.5	41.1	33.4	44.2	111.0	50	80
	10	300	550	37.4	32.6	40.3	100.8	50.9	41.3	54.7	137.3	38	61
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	117	187
	12	250	458	45.4	39.6	48.9	122.2	61.7	50.1	66.3	166.5	120	192
	15	200	367	56.2	49.0	60.5	151.2	76.3	61.9	82.1	205.9	110	176
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	120	192
	20	150	275	74.9	65.3	80.6	201.6	101.8	82.6	109.4	274.6	120	192
	25	120	220	92.6	80.8	99.8	249.4	125.9	102.1	135.4	339.6	110	176
	32	94	172	118.6	103.4	127.7	319.2	161.1	130.7	173.3	434.7	120	192
	40	75	138	146.6	127.8	157.9	394.8	-	161.7	214.3	537.7	110	176
	64	47	86	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…E08	without brake	1-stage	167.0	189.0	3.90	2-stage	184.5	206.5	4.40
	with brake		215.5	237.5	4.55		233.0	255.0	5.05
HMD08-032-…E08	without brake		182.0	204.0	4.30		199.5	221.5	4.80
	with brake		230.5	252.5	4.95		248.0	270.0	5.45
HMD08-042-…E08	without brake		197.0	219.0	4.70		214.5	236.5	5.20
	with brake		245.5	267.5	5.35		263.0	285.0	5.85
HMD08-057-…E08	without brake		227.0	249.0	5.80		244.5	266.5	6.30
	with brake		275.5	297.5	6.45		293.0	315.0	6.95

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…E08		HMD08-032-…E08		HMD08-042-…E08		HMD08-057-…E08	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	1.11E+00	+2.40E-01	1.44E+00	+2.40E-01	1.77E+00	+2.40E-01	2.43E+00	+2.40E-01
	4	9.12E-01		1.24E+00		1.57E+00		2.23E+00	
	5	8.80E-01		1.21E+00		1.54E+00		2.20E+00	
	7	8.36E-01		1.17E+00		1.50E+00		2.16E+00	
	8	8.27E-01		1.16E+00		1.49E+00		2.15E+00	
	10	8.17E-01		1.15E+00		1.48E+00		2.14E+00	
2-stage	9	1.07E+00		1.40E+00		1.73E+00		2.39E+00	
	12	1.05E+00		1.38E+00		1.71E+00		2.37E+00	
	15	1.04E+00		1.37E+00		1.70E+00		2.36E+00	
	16	9.03E-01		1.23E+00		1.56E+00		2.22E+00	
	20	8.63E-01		1.19E+00		1.52E+00		2.18E+00	
	25	8.61E-01		1.19E+00		1.52E+00		2.18E+00	
	32	8.23E-01		1.15E+00		1.48E+00		2.14E+00	
	40	8.23E-01		1.15E+00		1.48E+00		2.14E+00	
	64	8.23E-01		1.15E+00		1.48E+00		2.14E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMDo8-024 /-032 /-042 /-057
Gear Eo9

Stall, rated and peak torque - M [Nm]

				HMDo8-024-...Eo9[1]				HMDo8-032-...Eo9[1]				Gear Eo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	39	62
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	52	83
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	65	104
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	65	104
	8	375	688	17.8	16.3	18.6	46.6	23.3	20.2	24.8	62.1	50	80
	10	300	550	22.1	20.2	23.0	57.6	28.8	25.0	30.7	76.8	38	61
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	117	187
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	120	192
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	110	176
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	120	192
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	120	192
	25	120	220	54.6	49.9	57.0	142.5	71.3	61.8	76.0	190.0	110	176
	32	94	172	69.9	63.8	73.0	182.4	91.2	79.0	97.3	243.2	120	192
	40	75	138	86.5	79.0	90.2	225.6	112.8	97.8	120.3	300.8	110	176
	64	47	86	131.0	119.6	136.7	341.8	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

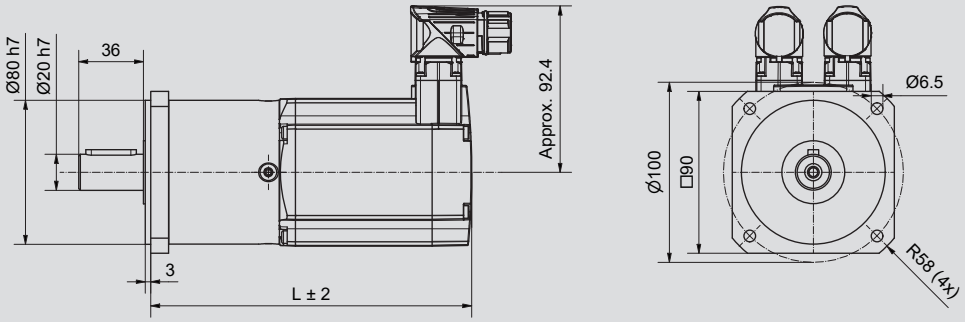
				HMDo8-042-...Eo9[1]				HMDo8-057-...Eo9[1]				Gear Eo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	39	62
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	52	83
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	65	104
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	65	104
	8	375	688	30.3	26.4	32.6	81.5	41.1	33.4	44.2	111.0	50	80
	10	300	550	37.4	32.6	40.3	100.8	50.9	41.3	54.7	137.3	38	61
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	117	187
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	120	192
	15	200	367	56.2	49.0	60.5	151.2	76.3	61.9	82.1	205.9	110	176
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	120	192
	20	150	275	74.9	65.3	80.6	201.6	101.8	82.6	109.4	274.6	120	192
	25	120	220	92.6	80.8	99.8	249.4	125.9	102.1	135.4	339.6	110	176
	32	94	172	118.6	103.4	127.7	319.2	161.1	130.7	173.3	434.7	120	192
	40	75	138	146.6	127.8	157.9	394.8	-	161.7	214.3	537.7	110	176
	64	47	86	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…E09	without brake	1-stage	178.5	200.5	4.70	2-stage	196.0	218.0	5.15
	with brake		227.0	249.0	5.35		244.5	266.5	5.80
HMD08-032-…E09	without brake		193.5	215.5	5.10		211.0	233.0	5.55
	with brake		242.0	264.0	5.75		259.5	281.5	6.20
HMD08-042-…E09	without brake		208.5	230.5	5.50		226.0	248.0	5.95
	with brake		257.0	279.0	6.15		274.5	296.5	6.60
HMD08-057-…E09	without brake		238.5	260.5	6.60		256.0	278.0	7.05
	with brake		287.0	309.0	7.25		304.5	326.5	7.70

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…E09		HMD08-032-…E09		HMD08-042-…E09		HMD08-057-…E09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	1.24E+00	+2.40E-01	1.57E+00	+2.40E-01	1.90E+00	+2.40E-01	2.56E+00	+2.40E-01
	4	1.01E+00		1.34E+00		1.67E+00		2.33E+00	
	5	9.26E-01		1.26E+00		1.59E+00		2.25E+00	
	7	8.59E-01		1.19E+00		1.52E+00		2.18E+00	
	8	8.45E-01		1.18E+00		1.51E+00		2.17E+00	
	10	8.28E-01		1.16E+00		1.49E+00		2.15E+00	
2-stage	9	1.08E+00		1.41E+00		1.74E+00		2.40E+00	
	12	1.06E+00		1.39E+00		1.72E+00		2.38E+00	
	15	1.05E+00		1.38E+00		1.71E+00		2.37E+00	
	16	9.11E-01		1.24E+00		1.57E+00		2.23E+00	
	20	8.66E-01		1.20E+00		1.53E+00		2.19E+00	
	25	8.63E-01		1.19E+00		1.52E+00		2.18E+00	
	32	8.25E-01		1.16E+00		1.49E+00		2.15E+00	
	40	8.23E-01		1.15E+00		1.48E+00		2.14E+00	
	64	8.24E-01		1.15E+00		1.48E+00		2.14E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear E08

Stall, rated and peak torque - M [Nm]

				HMD10-039-...E08[1]				HMD10-057-...E08[1]				Gear E08[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.6	9.4	11.5	28.8	15.3	11.8	16.8	42.0	39	62
	4	750	1250	14.1	12.5	15.3	38.4	20.4	15.7	22.3	56.1	52	83
	5	600	1000	17.6	15.7	19.1	48.0	25.5	19.6	27.9	70.1	65	104
	7	429	714	24.4	21.7	26.5	66.5	35.3	27.2	38.7	97.1	65	104
	8	375	625	27.9	24.8	30.3	76.0	40.4	31.0	44.2	111.0	50	80
	10	300	500	34.6	30.7	37.4	94.1	49.9	38.4	54.7	137.3	38	61
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	117	187
	12	250	417	41.9	37.2	45.4	114.1	60.5	46.6	66.3	166.5	120	192
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	110	176
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	120	192
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	120	192
	25	120	200	85.5	76.0	92.6	232.8	123.5	95.0	135.4	339.6	110	176
	32	94	156	109.4	97.3	118.6	297.9	158.1	121.6	173.3	434.7	120	192
	40	75	125	135.4	120.3	146.6	368.5	-	150.4	214.3	537.7	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

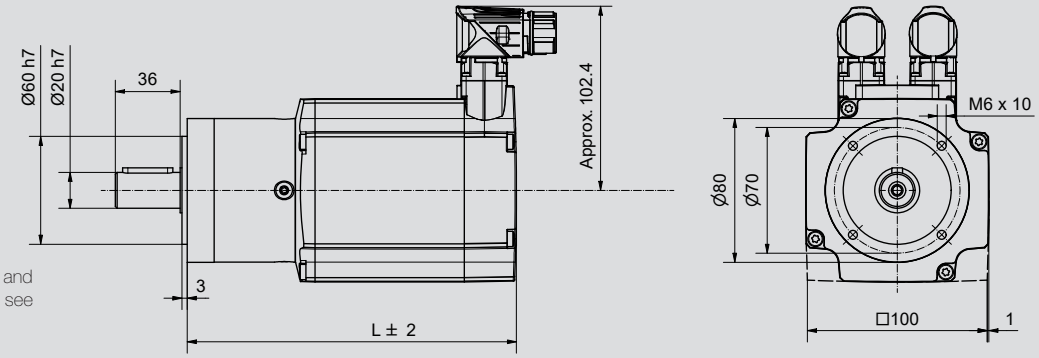
				HMD10-076-...E08[1]				HMD10-105-...E08[1]				Gear E08[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	19.1	14.1	22.3	55.9	25.3	16.2	30.9	77.3	39	62
	4	750	1250	25.5	18.8	29.8	74.5	33.7	21.6	41.2	103.1	52	83
	5	600	1000	31.9	23.5	37.2	93.1	42.1	27.0	51.5	128.9	65	104
	7	429	714	44.1	32.6	51.6	129.0	58.4	37.3	71.3	178.6	65	104
	8	375	625	50.4	37.2	59.0	147.4	66.7	42.7	81.5	204.1	50	80
	10	300	500	-	46.1	73.0	182.4	-	52.8	100.8	252.5	38	61
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	117	187
	12	250	417	75.7	55.9	88.5	221.2	100.1	64.0	122.2	306.1	120	192
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	110	176
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	120	192
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	120	192
	25	120	200	154.4	114.0	180.5	451.3	-	130.6	249.4	624.6	110	176
	32	94	156	-	145.9	231.0	577.6	-	167.2	319.2	799.5	120	192
	40	75	125	-	-	-	-	-	-	-	-	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…E08	without brake	1-stage	183.2	204.2	5.90	2-stage	200.7	221.7	6.40
	with brake		230.2	251.2	6.90		247.7	268.7	7.40
HMD10-057-…E08	without brake		198.2	219.2	6.40		215.7	236.7	6.90
	with brake		245.2	266.2	7.40		262.7	283.7	7.90
HMD10-076-…E08	without brake		213.2	234.2	6.90		230.7	251.7	7.40
	with brake		260.2	281.2	7.90		277.7	298.7	8.40
HMD10-105-…E08	without brake		243.2	264.2	7.90		260.7	281.7	8.40
	with brake		290.2	311.2	8.90		307.7	328.7	9.40

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…E08		HMD10-057-…E08		HMD10-076-…E08		HMD10-105-…E08	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.25E+00	+6.80E-01	3.06E+00	+6.80E-01	3.88E+00	+6.80E-01	5.52E+00	+6.80E-01
	4	2.05E+00		2.86E+00		3.68E+00		5.32E+00	
	5	2.02E+00		2.83E+00		3.65E+00		5.29E+00	
	7	1.98E+00		2.79E+00		3.61E+00		5.25E+00	
	8	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	10	1.96E+00		2.77E+00		3.59E+00		5.23E+00	
2-stage	9	2.21E+00		3.02E+00		3.84E+00		5.48E+00	
	12	2.19E+00		3.00E+00		3.82E+00		5.46E+00	
	15	2.18E+00		2.99E+00		3.81E+00		5.45E+00	
	16	2.04E+00		2.85E+00		3.67E+00		5.31E+00	
	20	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	25	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	32	1.96E+00		2.77E+00		3.59E+00		5.23E+00	
	40	1.96E+00		2.77E+00		3.59E+00		5.23E+00	
	64	1.96E+00		2.77E+00		3.59E+00		5.23E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear E09

Stall, rated and peak torque - M [Nm]

				HMD10-039-...E09[1]				HMD10-057-...E09[1]				Gear E09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.6	9.4	11.5	28.8	15.3	11.8	16.8	42.0	39	62
	4	750	1250	14.1	12.5	15.3	38.4	20.4	15.7	22.3	56.1	52	83
	5	600	1000	17.6	15.7	19.1	48.0	25.5	19.6	27.9	70.1	65	104
	7	429	714	24.4	21.7	26.5	66.5	35.3	27.2	38.7	97.1	65	104
	8	375	625	27.9	24.8	30.3	76.0	40.4	31.0	44.2	111.0	50	80
	10	300	500	34.6	30.7	37.4	94.1	49.9	38.4	54.7	137.3	38	61
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	117	187
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	120	192
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	110	176
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	120	192
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	120	192
	25	120	200	85.5	76.0	92.6	232.8	123.5	95.0	135.4	339.6	110	176
	32	94	156	109.4	97.3	118.6	297.9	158.1	121.6	173.3	434.7	120	192
	40	75	125	135.4	120.3	146.6	368.5	-	150.4	214.3	537.7	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

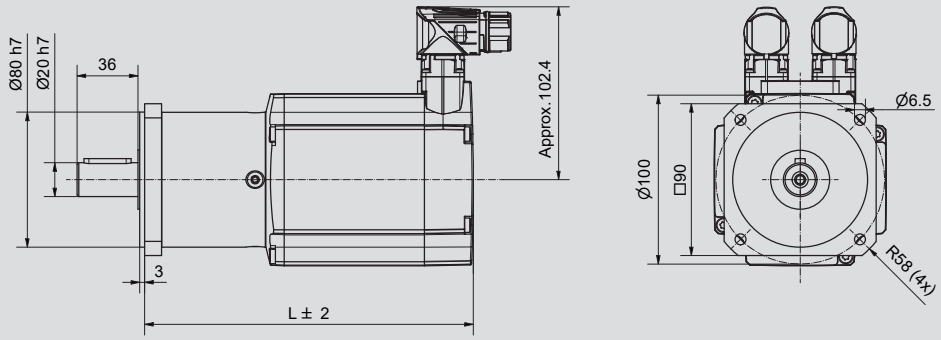
				HMD10-076-...E09[1]				HMD10-105-...E09[1]				Gear E09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	19.1	14.1	22.3	55.9	25.3	16.2	30.9	77.3	39	62
	4	750	1250	25.5	18.8	29.8	74.5	33.7	21.6	41.2	103.1	52	83
	5	600	1000	31.9	23.5	37.2	93.1	42.1	27.0	51.5	128.9	65	104
	7	429	714	44.1	32.6	51.6	129.0	58.4	37.3	71.3	178.6	65	104
	8	375	625	50.4	37.2	59.0	147.4	66.7	42.7	81.5	204.1	50	80
	10	300	500	-	46.1	73.0	182.4	-	52.8	100.8	252.5	38	61
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	117	187
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	120	192
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	110	176
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	120	192
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	120	192
	25	120	200	154.4	114.0	180.5	451.3	-	130.6	249.4	624.6	110	176
	32	94	156	-	145.9	231.0	577.6	-	167.2	319.2	799.5	120	192
	40	75	125	-	-	-	-	-	-	-	-	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…E09	without brake	1-stage	194.7	215.7	6.70	2-stage	212.2	233.2	7.15
	with brake		241.7	262.7	7.70		259.2	280.2	8.15
HMD10-057-…E09	without brake		209.7	230.7	7.20		227.2	248.2	7.65
	with brake		256.7	277.7	8.20		274.2	295.2	8.65
HMD10-076-…E09	without brake		224.7	245.7	7.70		242.2	263.2	8.15
	with brake		271.7	292.7	8.70		289.2	310.2	9.15
HMD10-105-…E09	without brake		254.7	275.7	8.70		272.2	293.2	9.15
	with brake		301.7	322.7	9.70		319.2	340.2	10.15

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…E09		HMD10-057-…E09		HMD10-076-…E09		HMD10-105-…E09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.38E+00	+6.80E-01	3.19E+00	+6.80E-01	4.01E+00	+6.80E-01	5.65E+00	+6.80E-01
	4	2.15E+00		2.96E+00		3.78E+00		5.42E+00	
	5	2.07E+00		2.88E+00		3.70E+00		5.34E+00	
	7	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	8	1.99E+00		2.80E+00		3.62E+00		5.26E+00	
	10	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
2-stage	9	2.22E+00		3.03E+00		3.85E+00		5.49E+00	
	12	2.20E+00		3.01E+00		3.83E+00		5.47E+00	
	15	2.19E+00		3.00E+00		3.82E+00		5.46E+00	
	16	2.05E+00		2.86E+00		3.68E+00		5.32E+00	
	20	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	25	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	32	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	40	1.96E+00		2.77E+00		3.59E+00		5.23E+00	
	64	1.96E+00		2.77E+00		3.59E+00		5.23E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear E10

Stall, rated and peak torque - M [Nm]

				HMD10-039-...E10[1]				HMD10-057-...E10[1]				Gear E10[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.6	9.4	11.5	28.8	15.3	11.8	16.8	42.0	72	115
	4	750	1250	14.1	12.5	15.3	38.4	20.4	15.7	22.3	56.1	96	153.5
	5	600	1000	17.6	15.7	19.1	48.0	25.5	19.6	27.9	70.1	120	192
	7	429	714	24.4	21.7	26.5	66.5	35.3	27.2	38.7	97.1	135	216
	8	375	625	27.9	24.8	30.3	76.0	40.4	31.0	44.2	111.0	120	192
	10	300	500	34.9	31.0	37.8	95.1	50.4	38.8	55.3	138.7	95	152
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	210	336
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	260	416
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	230	368
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	260	416
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	260	416
	25	120	200	85.5	76.0	92.6	232.8	123.5	95.0	135.4	339.6	230	368
	32	94	156	109.4	97.3	118.6	297.9	158.1	121.6	173.3	434.7	260	416
	40	75	125	135.4	120.3	146.6	368.5	195.5	150.4	214.3	537.7	230	368
	64	47	78	205.1	182.3	222.1	558.2	-	-	-	-	120	192

Stall, rated and peak torque - M [Nm]

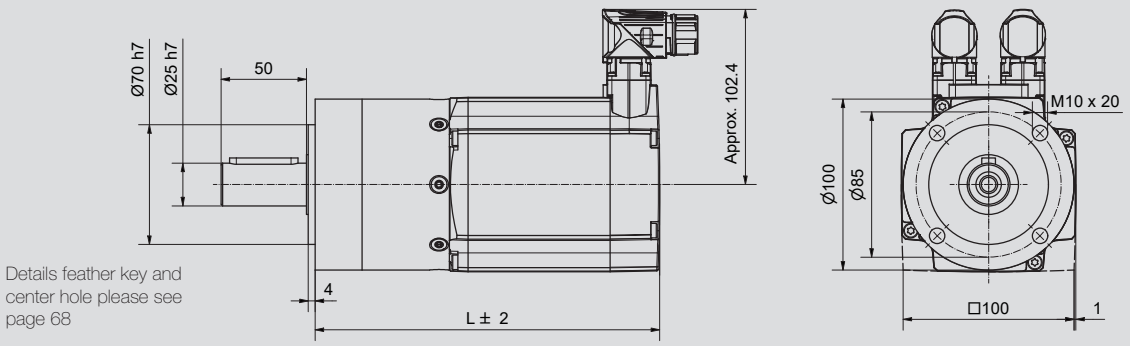
				HMD10-076-...E10[1]				HMD10-105-...E10[1]				Gear E10[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	19.1	14.1	22.3	55.9	25.3	16.2	30.9	77.3	72	115
	4	750	1250	25.5	18.8	29.8	74.5	33.7	21.6	41.2	103.1	96	153.5
	5	600	1000	31.9	23.5	37.2	93.1	42.1	27.0	51.5	128.9	120	192
	7	429	714	44.1	32.6	51.6	129.0	58.4	37.3	71.3	178.6	135	216
	8	375	625	50.4	37.2	59.0	147.4	66.7	42.7	81.5	204.1	120	192
	10	300	500	63.1	46.6	73.7	184.3	83.4	53.4	101.9	255.1	95	152
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	210	336
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	260	416
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	230	368
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	260	416
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	260	416
	25	120	200	154.4	114.0	180.5	451.3	204.3	130.6	249.4	624.6	230	368
	32	94	156	197.6	145.9	231.0	577.6	261.4	167.2	319.2	799.5	260	416
	40	75	125	244.4	180.5	285.8	714.4	323.4	206.8	394.8	988.9	230	368
	64	47	78	-	-	-	-	-	-	-	-	120	192

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…E10	without brake	1-stage	201.5	222.5	7.30	2-stage	229.5	250.5	8.70
	with brake		248.5	269.5	8.30		276.5	297.5	9.70
HMD10-057-…E10	without brake		216.5	237.5	7.80		244.5	265.5	9.20
	with brake		263.5	284.5	8.80		291.5	312.5	10.20
HMD10-076-…E10	without brake		231.5	252.5	8.30		259.5	280.5	9.70
	with brake		278.5	299.5	9.30		306.5	327.5	10.70
HMD10-105-…E10	without brake		261.5	282.5	9.30		289.5	310.5	10.70
	with brake		308.5	329.5	10.30		336.5	357.5	11.70

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…E10		HMD10-057-…E10		HMD10-076-…E10		HMD10-105-…E10	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.98E+00	+6.80E-01	3.79E+00	+6.80E-01	4.61E+00	+6.80E-01	6.25E+00	+6.80E-01
	4	2.45E+00		3.26E+00		4.08E+00		5.72E+00	
	5	2.25E+00		3.06E+00		3.88E+00		5.52E+00	
	7	2.08E+00		2.89E+00		3.71E+00		5.35E+00	
	8	2.05E+00		2.86E+00		3.68E+00		5.32E+00	
	10	1.99E+00		2.80E+00		3.62E+00		5.26E+00	
2-stage	9	2.90E+00		3.71E+00		4.53E+00		6.17E+00	
	12	2.84E+00		3.65E+00		4.47E+00		6.11E+00	
	15	2.82E+00		3.63E+00		4.45E+00		6.09E+00	
	16	2.30E+00		3.11E+00		3.93E+00		5.57E+00	
	20	2.19E+00		3.00E+00		3.82E+00		5.46E+00	
	25	2.18E+00		2.99E+00		3.81E+00		5.45E+00	
	32	2.04E+00		2.85E+00		3.67E+00		5.31E+00	
	40	2.03E+00		2.84E+00		3.66E+00		5.30E+00	
	64	2.03E+00		2.84E+00		3.66E+00		5.30E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gearrated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information".
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD13-113 /-190 /-245
Gear E10

Stall, rated and peak torque - M [Nm]

				HMD13-133-...E10[1]				HMD13-190-...E10[1]				Gear E10[2]	
	i	$n_{out,2000\ rpm}$[3]	$n_{out,3600\ rpm}$[3]	$M_{n,2000\ rpm}$	$M_{n,3600\ rpm}$	M_o	M_{max}	$M_{n,2000\ rpm}$	$M_{n,3600\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	667	1200	33.8	26.5	39.1	97.9	47.0	32.9	55.9	139.7	72	115
	4	500	900	45.1	35.3	52.1	130.5	62.7	43.9	74.5	186.2	96	153.5
	5	400	720	56.4	44.1	65.2	163.2	78.4	54.9	93.1	232.8	120	192
	7	286	514	78.1	61.1	90.3	226.1	108.6	76.0	129.0	322.5	135	216
	8	250	450	89.2	69.8	103.2	258.4	124.2	86.9	147.4	368.6	120	192
	10	200	360	111.6	87.3	129.0	323.0	-	108.6	184.3	460.8	95	152
2-stage	9	222	400	100.4	78.6	116.1	290.7	139.7	97.8	165.9	414.7	210	336
	12	167	300	132.5	103.7	153.2	383.6	184.3	129.0	218.9	547.2	260	416
	15	133	240	165.6	129.6	191.5	479.5	230.4	161.3	273.6	684.0	230	368
	16	125	225	176.6	138.2	204.3	511.5	245.8	172.0	291.8	729.6	260	416
	20	100	180	220.8	172.8	255.4	639.4	307.2	215.0	364.8	912.0	260	416
	25	80	144	273.1	213.8	315.9	790.9	-	266.0	451.3	1128.1	230	368
	32	63	113	349.6	273.6	404.3	1012.3	-	340.5	577.6	1444.0	260	416
	40	50	90	-	338.4	500.1	1252.1	-	-	-	-	230	368
	64	31	56	-	-	-	-	-	-	-	-	120	192

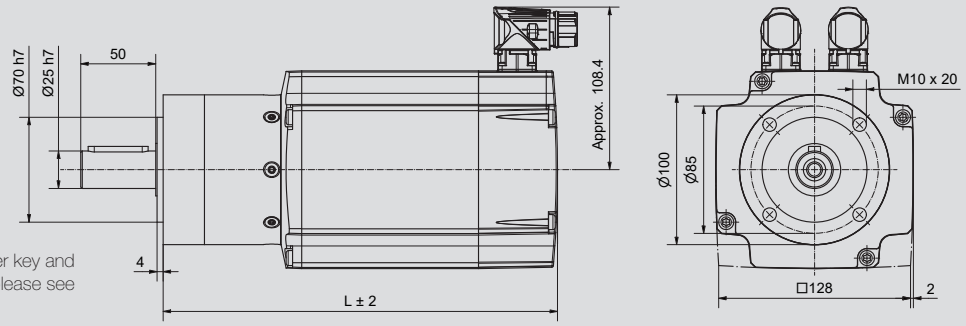
Stall, rated and peak torque - M [Nm]

				HMD13-245-...E10[1]				Gear E10[2]	
	i	$n_{out,2000\ rpm}$[3]	$n_{out,3600\ rpm}$[3]	$M_{n,2000\ rpm}$	$M_{n,3600\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	667	1200	60.3	39.1	72.0	180.2	72	115
	4	500	900	80.4	52.1	96.0	240.3	96	153.5
	5	400	720	100.5	65.2	120.1	300.4	120	192
	7	286	514	139.2	90.3	166.4	416.2	135	216
	8	250	450	159.1	103.2	190.1	475.7	120	192
	10	200	360	-	129.0	237.7	594.6	95	152
2-stage	9	222	400	179.0	116.1	213.9	535.1	210	336
	12	167	300	236.2	153.2	282.2	706.2	260	416
	15	133	240	295.2	191.5	352.8	882.7	230	368
	16	125	225	314.9	204.3	376.3	941.6	260	416
	20	100	180	-	255.4	470.4	1177.0	260	416
	25	80	144	-	315.9	581.9	1455.9	230	368
	32	63	113	-	-	-	-	260	416
	40	50	90	-	-	-	-	230	368
	64	31	56	-	-	-	-	120	192

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD13-133-…E10	without brake	1-stage	-	263.3	11.20	2-stage	-	291.3	12.60
	with brake		-	301.0	12.30		-	329.0	13.70
HMD13-190-…E10	without brake		-	293.3	13.80		-	321.3	15.20
	with brake		-	331.0	14.90		-	359.0	16.30
HMD13-245-…E10	without brake		-	323.3	16.30		-	351.3	17.70
	with brake		-	384.3	19.30		-	412.3	20.70

Moment of inertia 5) - J_1 [kg-cm²]

		HMD13-133-…E10		HMD13-190-…E10		HMD13-245-…E10	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	9.24E+00	+1.90E+00	1.30E+01	+1.90E+00	1.68E+01	+7.40E+00
	4	8.71E+00		1.25E+01		1.63E+01	
	5	8.51E+00		1.23E+01		1.61E+01	
	7	8.34E+00		1.21E+01		1.59E+01	
	8	8.31E+00		1.21E+01		1.59E+01	
	10	8.25E+00		1.21E+01		1.59E+01	
2-stage	9	9.16E+00		1.30E+01		1.68E+01	
	12	9.10E+00		1.29E+01		1.67E+01	
	15	9.08E+00		1.29E+01		1.67E+01	
	16	8.56E+00		1.24E+01		1.62E+01	
	20	8.45E+00		1.22E+01		1.60E+01	
	25	8.44E+00		1.22E+01		1.60E+01	
	32	8.30E+00		1.21E+01		1.59E+01	
	40	8.29E+00		1.21E+01		1.59E+01	
	64	8.29E+00		1.21E+01		1.59E+01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD06-011 /-019 /-026
Gear P07

Stall, rated and peak torque - M [Nm]

				HMD06-011-...P07[1]				HMD06-019-...P07[1]				Gear P07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	2.9	2.9	2.9	7.4	5.0	4.3	5.6	14.1	17	27.5
	4	750	1500	3.9	3.9	3.9	9.8	6.7	5.7	7.4	18.8	23	37
	5	600	1200	4.9	4.9	4.9	12.1	8.2	7.0	9.2	23.3	29	46
	7	429	857	6.8	6.8	6.8	17.0	11.5	9.8	12.9	32.6	25	40
	8	375	750	7.7	7.7	7.7	19.2	13.1	11.1	14.6	36.9	18	29
	10	300	600	9.5	9.5	9.5	23.8	16.2	13.8	18.1	45.6	15	24
2-stage	9	333	667	8.6	8.6	8.6	21.6	14.7	12.5	16.4	41.5	33	53
	12	250	500	11.5	11.5	11.5	28.8	19.6	16.7	21.9	55.3	33	53
	15	200	400	14.3	14.3	14.3	35.6	24.2	20.7	27.1	68.4	33	53
	16	188	375	15.2	15.2	15.2	38.0	25.8	22.0	28.9	73.0	33	53
	20	150	300	19.0	19.0	19.0	47.5	32.3	27.6	36.1	91.2	33	53
	25	120	240	23.5	23.5	23.5	58.8	40.0	34.1	44.7	112.8	30	48
	32	94	188	30.1	30.1	30.1	75.2	-	43.6	57.2	144.4	33	53
	40	75	150	37.2	37.2	37.2	93.0	-	-	-	-	30	48
	64	47	94	55.0	55.0	55.0	137.6	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

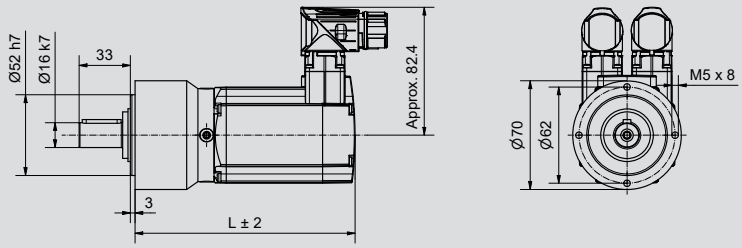
				HMD06-026-...P07[1]				Gear P07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	7.4	5.9	7.6	19.1	17	27.5
	4	750	1500	9.8	7.8	10.2	25.5	23	37
	5	600	1200	12.1	9.7	12.6	31.5	29	46
	7	429	857	17.0	13.6	17.7	44.1	25	40
	8	375	750	19.2	15.4	20.0	49.9	18	29
	10	300	600	-	19.0	24.7	61.8	15	24
2-stage	9	333	667	21.6	17.3	22.5	56.2	33	53
	12	250	500	28.8	23.0	30.0	74.9	33	53
	15	200	400	35.6	28.5	37.1	92.6	33	53
	16	188	375	38.0	30.4	39.5	98.8	33	53
	20	150	300	47.5	38.0	49.4	123.5	33	53
	25	120	240	-	-	-	-	30	48
	32	94	188	-	-	-	-	33	53
	40	75	150	-	-	-	-	30	48
	64	47	94	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…P07	without brake	1-stage	142.0	160.0	2.40	2-stage	155.0	173.0	2.70
	with brake		181.5	199.5	2.75		194.5	212.5	3.05
HMD06-019-…P07	without brake		167.0	185.0	2.80		180.0	198.0	3.10
	with brake		206.5	224.5	3.15		219.5	237.5	3.45
HMD06-026-…P07	without brake		197.0	215.0	3.20		210.0	228.0	3.50
	with brake		236.5	254.5	3.55		249.5	267.5	3.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-...P07		HMD06-019-...P07		HMD06-026-...P07	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	3.81E-01	+8.90E-02	6.02E-01	+8.90E-02	8.24E-01	+8.90E-02
	4	3.24E-01		5.45E-01		7.67E-01	
	5	3.03E-01		5.24E-01		7.46E-01	
	7	2.85E-01		5.06E-01		7.28E-01	
	8	2.81E-01		5.02E-01		7.24E-01	
	10	2.76E-01		4.97E-01		7.19E-01	
2-stage	9	3.33E-01		5.54E-01		7.76E-01	
	12	3.28E-01		5.49E-01		7.71E-01	
	15	2.85E-01		5.06E-01		7.28E-01	
	16	2.94E-01		5.15E-01		7.37E-01	
	20	2.84E-01		5.05E-01		7.27E-01	
	25	2.82E-01		5.03E-01		7.25E-01	
	32	2.74E-01		4.95E-01		7.17E-01	
	40	2.74E-01		4.95E-01		7.17E-01	
	64	2.73E-01		4.94E-01		7.16E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear P07

Stall, rated and peak torque - M [Nm]

				HMD08-024-...P07[1]				HMD08-032-...P07[1]				Gear P07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	17	27.5
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	23	37
	5	600	1100	11.2	10.2	11.6	29.1	14.6	12.6	15.5	38.8	29	46
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	25	40
	8	375	688	17.7	16.1	18.4	46.1	23.0	20.0	24.6	61.4	18	29
	10	300	550	21.9	20.0	22.8	57.0	-	-	-	-	15	24
2-stage	9	333	611	19.9	18.1	20.7	51.8	25.9	22.5	27.6	69.1	33	53
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	33	53
	15	200	367	32.8	29.9	34.2	85.5	42.8	37.1	45.6	114.0	33	53
	16	188	344	35.0	31.9	36.5	91.2	45.6	39.5	48.6	121.6	33	53
	20	150	275	43.7	39.9	45.6	114.0	-	49.4	60.8	152.0	33	53
	25	120	220	-	-	-	-	-	-	-	-	30	48
	32	94	172	-	-	-	-	-	-	-	-	33	53
	40	75	138	-	-	-	-	-	-	-	-	30	48
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

				HMD08-042-...P07[1]				HMD08-057-...P07[1]				Gear P07[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	17	27.5
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	23	37
	5	600	1100	18.9	16.5	20.4	50.9	25.7	20.9	27.6	69.4	29	46
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	25	40
	8	375	688	-	26.1	32.3	80.6	-	-	-	-	18	29
	10	300	550	-	-	-	-	-	-	-	-	15	24
2-stage	9	333	611	33.7	29.4	36.3	90.7	45.8	37.2	49.2	123.6	33	53
	12	250	458	44.9	39.2	48.4	121.0	-	-	-	-	33	53
	15	200	367	-	48.5	59.9	149.6	-	-	-	-	33	53
	16	188	344	-	-	-	-	-	-	-	-	33	53
	20	150	275	-	-	-	-	-	-	-	-	33	53
	25	120	220	-	-	-	-	-	-	-	-	30	48
	32	94	172	-	-	-	-	-	-	-	-	33	53
	40	75	138	-	-	-	-	-	-	-	-	30	48
	64	47	86	-	-	-	-	-	-	-	-	18	29

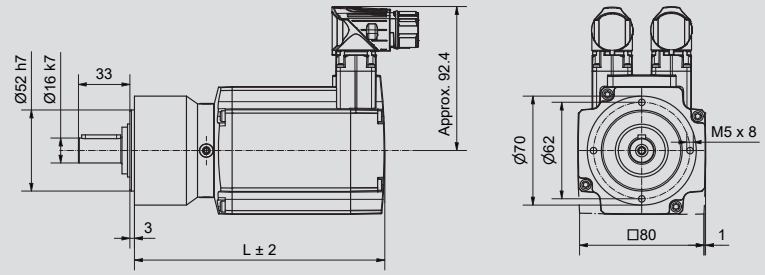
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…P07	without brake	1-stage	160.8	182.8	3.70	2-stage	173.8	195.8	4.00
	with brake		209.3	231.3	4.35		222.3	244.3	4.65
HMD08-032-…P07	without brake		175.8	197.8	4.10		188.8	210.8	4.40
	with brake		224.3	246.3	4.75		237.3	259.3	5.05
HMD08-042-…P07	without brake		190.8	212.8	4.50		203.8	225.8	4.80
	with brake		239.3	261.3	5.15		252.3	274.3	5.45
HMD08-057-…P07	without brake		220.8	242.8	5.60		233.8	255.8	5.90
	with brake		269.3	291.3	6.25		282.3	304.3	6.55

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…P07		HMD08-032-…P07		HMD08-042-…P07		HMD08-057-…P07	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	9.13E-01	+2.40E-01	1.24E+00	+2.40E-01	1.57E+00	+2.40E-01	2.23E+00	+2.40E-01
	4	8.56E-01		1.19E+00		1.52E+00		2.18E+00	
	5	8.35E-01		1.17E+00		1.50E+00		2.16E+00	
	7	8.17E-01		1.15E+00		1.48E+00		2.14E+00	
	8	8.13E-01		1.14E+00		1.47E+00		2.13E+00	
	10	8.08E-01		1.14E+00		1.47E+00		2.13E+00	
2-stage	9	8.65E-01		1.20E+00		1.53E+00		2.19E+00	
	12	8.60E-01		1.19E+00		1.52E+00		2.18E+00	
	15	8.17E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.26E-01		1.16E+00		1.49E+00		2.15E+00	
	20	8.16E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.14E-01		1.14E+00		1.47E+00		2.13E+00	
	32	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.05E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear P09

Stall, rated and peak torque - M [Nm]

				HMD08-024-...P09[1]				HMD08-032-...P09[1]				Gear P09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	39	62
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	52	83
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	65	104
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	65	104
	8	375	688	17.8	16.3	18.6	46.6	23.3	20.2	24.8	62.1	50	80
	10	300	550	22.1	20.2	23.0	57.6	28.8	25.0	30.7	76.8	38	61
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	97	155
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	90	144
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	82	131
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	90	144
	20	150	275	43.7	39.9	45.6	114.0	57.0	49.4	60.8	152.0	90	144
	25	120	220	54.6	49.9	57.0	142.5	71.3	61.8	76.0	190.0	82	131
	32	94	172	69.2	63.2	72.2	180.5	90.2	78.2	96.3	240.6	90	144
	40	75	138	86.5	79.0	90.2	225.6	112.8	97.8	120.3	300.8	82	131
	64	47	86	131.0	119.6	136.7	341.8	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

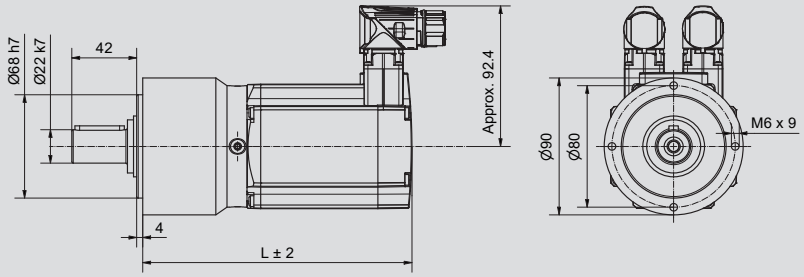
				HMD08-042-...P09[1]				HMD08-057-...P09[1]				Gear P09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	39	62
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	52	83
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	65	104
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	65	104
	8	375	688	30.3	26.4	32.6	81.5	41.1	33.4	44.2	111.0	50	80
	10	300	550	37.4	32.6	40.3	100.8	50.9	41.3	54.7	137.3	38	61
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	97	155
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	90	144
	15	200	367	56.2	49.0	60.5	151.2	76.3	61.9	82.1	205.9	82	131
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	90	144
	20	150	275	74.1	64.6	79.8	199.5	100.7	81.7	108.3	271.7	90	144
	25	120	220	92.6	80.8	99.8	249.4	-	102.1	135.4	339.6	82	131
	32	94	172	117.3	102.3	126.3	315.8	-	129.3	171.5	430.1	90	144
	40	75	138	-	-	-	-	-	-	-	-	82	131
	64	47	86	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…P09	without brake	1-stage	174.5	196.5	5.10	2-stage	192.5	214.5	5.70
	with brake		223.0	245.0	5.75		241.0	263.0	6.35
HMD08-032-…P09	without brake		189.5	211.5	5.50		207.5	229.5	6.10
	with brake		238.0	260.0	6.15		256.0	278.0	6.75
HMD08-042-…P09	without brake		204.5	226.5	5.90		222.5	244.5	6.50
	with brake		253.0	275.0	6.55		271.0	293.0	7.15
HMD08-057-…P09	without brake		234.5	256.5	7.00		252.5	274.5	7.60
	with brake		283.0	305.0	7.65		301.0	323.0	8.25

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…P09		HMD08-032-…P09		HMD08-042-…P09		HMD08-057-…P09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	1.25E+00	+2.40E-01	1.58E+00	+2.40E-01	1.91E+00	+2.40E-01	2.57E+00	+2.40E-01
	4	1.01E+00		1.34E+00		1.67E+00		2.33E+00	
	5	9.34E-01		1.26E+00		1.59E+00		2.25E+00	
	7	8.67E-01		1.20E+00		1.53E+00		2.19E+00	
	8	8.51E-01		1.18E+00		1.51E+00		2.17E+00	
	10	8.32E-01		1.16E+00		1.49E+00		2.15E+00	
2-stage	9	1.08E+00		1.41E+00		1.74E+00		2.40E+00	
	12	1.06E+00		1.39E+00		1.72E+00		2.38E+00	
	15	1.05E+00		1.38E+00		1.71E+00		2.37E+00	
	16	9.09E-01		1.24E+00		1.57E+00		2.23E+00	
	20	8.67E-01		1.20E+00		1.53E+00		2.19E+00	
	25	8.64E-01		1.19E+00		1.52E+00		2.18E+00	
	32	8.25E-01		1.16E+00		1.49E+00		2.15E+00	
	40	8.24E-01		1.15E+00		1.48E+00		2.14E+00	
	64	8.24E-01		1.15E+00		1.48E+00		2.14E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information".
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear P09

Stall, rated and peak torque - M [Nm]

				HMD10-039-...P09[1]				HMD10-057-...P09[1]				Gear P09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.6	9.4	11.5	28.8	15.3	11.8	16.8	42.0	39	62
	4	750	1250	14.1	12.5	15.3	38.4	20.4	15.7	22.3	56.1	52	83
	5	600	1000	17.6	15.7	19.1	48.0	25.5	19.6	27.9	70.1	65	104
	7	429	714	24.4	21.7	26.5	66.5	35.3	27.2	38.7	97.1	65	104
	8	375	625	27.9	24.8	30.3	76.0	40.4	31.0	44.2	111.0	50	80
	10	300	500	34.6	30.7	37.4	94.1	49.9	38.4	54.7	137.3	38	61
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	97	155
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	90	144
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	82	131
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	90	144
	20	150	250	68.4	60.8	74.1	186.2	98.8	76.0	108.3	271.7	90	144
	25	120	200	85.5	76.0	92.6	232.8	-	95.0	135.4	339.6	82	131
	32	94	156	108.3	96.3	117.3	294.8	-	120.3	171.5	430.1	90	144
	40	75	125	-	120.3	146.6	368.5	-	-	-	-	82	131
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

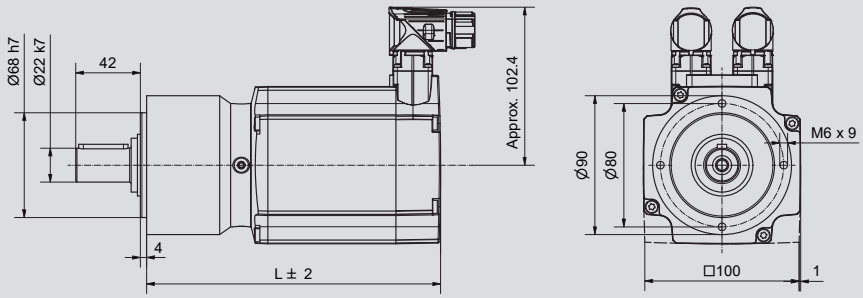
				HMD10-076-...P09[1]				HMD10-105-...P09[1]				Gear P09[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	19.1	14.1	22.3	55.9	25.3	16.2	30.9	77.3	39	62
	4	750	1250	25.5	18.8	29.8	74.5	33.7	21.6	41.2	103.1	52	83
	5	600	1000	31.9	23.5	37.2	93.1	42.1	27.0	51.5	128.9	65	104
	7	429	714	44.1	32.6	51.6	129.0	58.4	37.3	71.3	178.6	65	104
	8	375	625	50.4	37.2	59.0	147.4	66.7	42.7	81.5	204.1	50	80
	10	300	500	-	46.1	73.0	182.4	-	52.8	100.8	252.5	38	61
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	97	155
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	90	144
	15	200	333	93.6	69.1	109.4	273.6	-	79.2	151.2	378.7	82	131
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	90	144
	20	150	250	123.5	91.2	144.4	361.0	-	104.5	199.5	499.7	90	144
	25	120	200	-	114.0	180.5	451.3	-	-	-	-	82	131
	32	94	156	-	-	-	-	-	-	-	-	90	144
	40	75	125	-	-	-	-	-	-	-	-	82	131
	64	47	78	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Details feather key and center hole please see page 68

Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…P09	without brake	1-stage	190.7	211.7	7.10	2-stage	208.7	229.7	7.70
	with brake		237.7	258.7	8.10		255.7	276.7	8.70
HMD10-057-…P09	without brake		205.7	226.7	7.60		223.7	244.7	8.20
	with brake		252.7	273.7	8.60		270.7	291.7	9.20
HMD10-076-…P09	without brake		220.7	241.7	8.10		238.7	259.7	8.70
	with brake		267.7	288.7	9.10		285.7	306.7	9.70
HMD10-105-…P09	without brake		250.7	271.7	9.10		268.7	289.7	9.70
	with brake		297.7	318.7	10.10		315.7	336.7	10.70

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…P09		HMD10-057-…P09		HMD10-076-…P09		HMD10-105-…P09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.39E+00	+6.80E-01	3.20E+00	+6.80E-01	4.02E+00	+6.80E-01	5.66E+00	+6.80E-01
	4	2.15E+00		2.96E+00		3.78E+00		5.42E+00	
	5	2.07E+00		2.88E+00		3.70E+00		5.34E+00	
	7	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	8	1.99E+00		2.80E+00		3.62E+00		5.26E+00	
	10	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
2-stage	9	2.22E+00		3.03E+00		3.85E+00		5.49E+00	
	12	2.20E+00		3.01E+00		3.83E+00		5.47E+00	
	15	2.19E+00		3.00E+00		3.82E+00		5.46E+00	
	16	2.05E+00		2.86E+00		3.68E+00		5.32E+00	
	20	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	25	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	32	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	40	1.96E+00		2.77E+00		3.59E+00		5.23E+00	
	64	1.96E+00		2.77E+00		3.59E+00		5.23E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD06-011 /-019 /-026
Gear H06

Stall, rated and peak torque - M [Nm]

				HMD06-011-...H06[1]				HMD06-019-...H06[1]				Gear H06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	2.9	2.9	2.9	7.2	4.9	4.2	5.5	13.8	17	27.5
	4	750	1500	3.9	3.9	3.9	9.7	6.6	5.6	7.4	18.6	23	37
	5	600	1200	4.9	4.9	4.9	12.1	8.2	7.0	9.2	23.3	29	46
	7	429	857	6.7	6.7	6.7	16.6	11.3	9.6	12.6	31.9	25	40
	8	375	750	7.5	7.5	7.5	18.8	12.8	10.9	14.3	36.1	18	29
	10	300	600	9.2	9.2	9.2	23.0	15.6	13.3	17.5	44.2	15	24
2-stage	9	333	667	8.6	8.6	8.6	21.6	14.7	12.5	16.4	41.5	44	70
	12	250	500	11.4	11.4	11.4	28.5	19.4	16.5	21.7	54.7	44	70
	15	200	400	14.3	14.3	14.3	35.6	24.2	20.7	27.1	68.4	44	70
	16	188	375	15.2	15.2	15.2	38.0	25.8	22.0	28.9	73.0	44	70
	20	150	300	19.0	19.0	19.0	47.5	32.3	27.6	36.1	91.2	44	70
	25	120	240	23.5	23.5	23.5	58.8	40.0	34.1	44.7	112.8	40	64
	32	94	188	30.1	30.1	30.1	75.2	51.1	43.6	57.2	144.4	44	70
	40	75	150	37.2	37.2	37.2	93.0	-	53.9	70.7	178.6	40	64
	64	47	94	54.4	54.4	54.4	136.0	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm] [Nm]

				HMD06-026-...H06[1]				Gear H06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	7.2	5.8	7.5	18.7	17	27.5
	4	750	1500	9.7	7.8	10.1	25.2	23	37
	5	600	1200	12.1	9.7	12.6	31.5	29	46
	7	429	857	16.6	13.3	17.3	43.2	25	40
	8	375	750	18.8	15.0	19.6	48.9	18	29
	10	300	600	-	18.4	23.9	59.8	15	24
2-stage	9	333	667	21.6	17.3	22.5	56.2	44	70
	12	250	500	28.5	22.8	29.6	74.1	44	70
	15	200	400	35.6	28.5	37.1	92.6	44	70
	16	188	375	38.0	30.4	39.5	98.8	44	70
	20	150	300	47.5	38.0	49.4	123.5	44	70
	25	120	240	58.8	47.0	61.1	152.8	40	64
	32	94	188	-	60.2	78.2	195.5	44	70
	40	75	150	-	-	-	-	40	64
	64	47	94	-	-	-	-	18	29

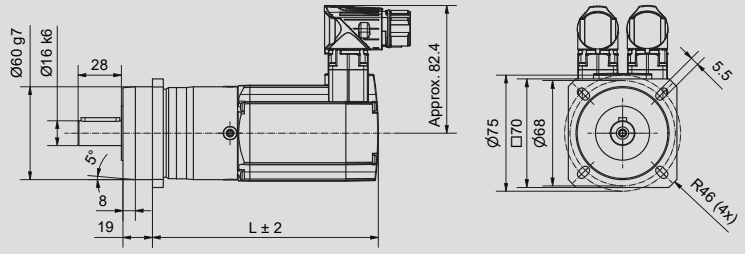
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…H06	without brake	1-stage	146.0	164.0	2.50	2-stage	158.5	176.5	2.70
	with brake		185.5	203.5	2.85		198.0	216.0	3.05
HMD06-019-…H06	without brake		171.0	189.0	2.90		183.5	201.5	3.10
	with brake		210.5	228.5	3.25		223.0	241.0	3.45
HMD06-026-…H06	without brake		201.0	219.0	3.30		213.5	231.5	3.50
	with brake		240.5	258.5	3.65		253.0	271.0	3.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-...H06		HMD06-019-...H06		HMD06-026-...H06	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	3.85E-01	+8.90E-02	6.06E-01	+8.90E-02	8.28E-01	+8.90E-02
	4	3.27E-01		5.48E-01		7.70E-01	
	5	3.05E-01		5.26E-01		7.48E-01	
	7	2.85E-01		5.06E-01		7.28E-01	
	8	2.82E-01		5.03E-01		7.25E-01	
	10	2.76E-01		4.97E-01		7.19E-01	
2-stage	9	3.42E-01		5.63E-01		7.85E-01	
	12	3.36E-01		5.57E-01		7.79E-01	
	15	2.88E-01		5.09E-01		7.31E-01	
	16	2.99E-01		5.20E-01		7.42E-01	
	20	2.87E-01		5.08E-01		7.30E-01	
	25	2.86E-01		5.07E-01		7.29E-01	
	32	2.75E-01		4.96E-01		7.18E-01	
	40	2.75E-01		4.96E-01		7.18E-01	
	64	2.75E-01		4.96E-01		7.18E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear H06

Stall, rated and peak torque - M [Nm]

				HMD08-024-...H06[1]				HMD08-032-...H06[1]				Gear H06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.6	6.0	6.9	17.3	8.6	7.5	9.2	23.0	17	27.5
	4	750	1375	8.9	8.1	9.3	23.3	11.6	10.1	12.4	31.0	23	37
	5	600	1100	11.2	10.2	11.6	29.1	14.6	12.6	15.5	38.8	29	46
	7	429	786	15.3	14.0	16.0	39.9	20.0	17.3	21.3	53.2	25	40
	8	375	688	17.3	15.8	18.0	45.1	22.6	19.6	24.1	60.2	18	29
	10	300	550	21.2	19.3	22.1	55.2	-	-	-	-	15	24
2-stage	9	333	611	19.9	18.1	20.7	51.8	25.9	22.5	27.6	69.1	44	70
	12	250	458	26.2	23.9	27.4	68.4	34.2	29.6	36.5	91.2	44	70
	15	200	367	32.8	29.9	34.2	85.5	42.8	37.1	45.6	114.0	44	70
	16	188	344	35.0	31.9	36.5	91.2	45.6	39.5	48.6	121.6	44	70
	20	150	275	43.7	39.9	45.6	114.0	57.0	49.4	60.8	152.0	44	70
	25	120	220	54.1	49.4	56.4	141.0	-	-	-	-	40	64
	32	94	172	-	63.2	72.2	180.5	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

				HMD08-042-...H06[1]				HMD08-057-...H06[1]				Gear H06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.2	9.8	12.1	30.2	15.3	12.4	16.4	41.2	17	27.5
	4	750	1375	15.1	13.2	16.3	40.7	20.6	16.7	22.1	55.5	23	37
	5	600	1100	18.9	16.5	20.4	50.9	25.7	20.9	27.6	69.4	29	46
	7	429	786	25.9	22.6	27.9	69.8	35.2	28.6	37.9	95.1	25	40
	8	375	688	-	25.6	31.6	79.0	-	-	-	-	18	29
	10	300	550	-	-	-	-	-	-	-	-	15	24
2-stage	9	333	611	33.7	29.4	36.3	90.7	45.8	37.2	49.2	123.6	44	70
	12	250	458	44.5	38.8	47.9	119.7	60.4	49.0	65.0	163.0	44	70
	15	200	367	55.6	48.5	59.9	149.6	-	61.3	81.2	203.8	44	70
	16	188	344	59.3	51.7	63.8	159.6	-	65.4	86.6	217.4	44	70
	20	150	275	-	64.6	79.8	199.5	-	-	-	-	44	70
	25	120	220	-	-	-	-	-	-	-	-	40	64
	32	94	172	-	-	-	-	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

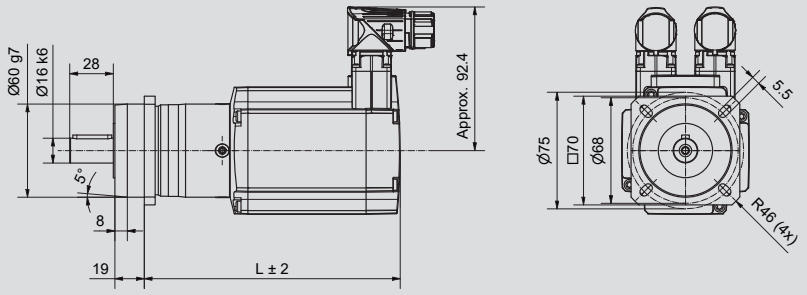
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…H06	without brake	1-stage	164.8	186.8	3.80	2-stage	177.3	199.3	4.00
	with brake		213.3	235.3	4.45		225.8	247.8	4.65
HMD08-032-…H06	without brake		179.8	201.8	4.20		192.3	214.3	4.40
	with brake		228.3	250.3	4.85		240.8	262.8	5.05
HMD08-042-…H06	without brake		194.8	216.8	4.60		207.3	229.3	4.80
	with brake		243.3	265.3	5.25		255.8	277.8	5.45
HMD08-057-…H06	without brake		224.8	246.8	5.70		237.3	259.3	5.90
	with brake		273.3	295.3	6.35		285.8	307.8	6.55

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…H06		HMD08-032-…H06		HMD08-042-…H06		HMD08-057-…H06	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	9.17E-01	+2.40E-01	1.25E+00	+2.40E-01	1.58E+00	+2.40E-01	2.24E+00	+2.40E-01
	4	8.59E-01		1.19E+00		1.52E+00		2.18E+00	
	5	8.37E-01		1.17E+00		1.50E+00		2.16E+00	
	7	8.17E-01		1.15E+00		1.48E+00		2.14E+00	
	8	8.14E-01		1.14E+00		1.47E+00		2.13E+00	
	10	8.08E-01		1.14E+00		1.47E+00		2.13E+00	
2-stage	9	8.74E-01		1.20E+00		1.53E+00		2.19E+00	
	12	8.68E-01		1.20E+00		1.53E+00		2.19E+00	
	15	8.20E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.31E-01		1.16E+00		1.49E+00		2.15E+00	
	20	8.19E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.18E-01		1.15E+00		1.48E+00		2.14E+00	
	32	8.07E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.07E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.07E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMDo8-024 /-032 /-042 /-057
Gear Ho8

Stall, rated and peak torque - M [Nm]

				HMDo8-024-...Ho8[1]				HMDo8-032-...Ho8[1]				Gear Ho8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.7	6.1	7.0	17.5	8.7	7.6	9.3	23.3	39	62
	4	750	1375	8.9	8.1	9.3	23.3	11.6	10.1	12.4	31.0	52	83
	5	600	1100	11.2	10.2	11.6	29.1	14.6	12.6	15.5	38.8	65	104
	7	429	786	15.5	14.1	16.1	40.3	20.2	17.5	21.5	53.8	65	104
	8	375	688	17.7	16.1	18.4	46.1	23.0	20.0	24.6	61.4	50	80
	10	300	550	21.6	19.7	22.6	56.4	28.2	24.4	30.1	75.2	38	61
2-stage	9	333	611	19.9	18.1	20.7	51.8	25.9	22.5	27.6	69.1	117	187
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	120	192
	15	200	367	32.8	29.9	34.2	85.5	42.8	37.1	45.6	114.0	110	176
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	120	192
	20	150	275	43.7	39.9	45.6	114.0	57.0	49.4	60.8	152.0	120	192
	25	120	220	54.6	49.9	57.0	142.5	71.3	61.8	76.0	190.0	110	176
	32	94	172	69.9	63.8	73.0	182.4	91.2	79.0	97.3	243.2	120	192
	40	75	138	86.5	79.0	90.2	225.6	112.8	97.8	120.3	300.8	110	176
	64	47	86	129.5	118.3	135.2	337.9	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

				HMDo8-042-...Ho8[1]				HMDo8-057-...Ho8[1]				Gear Ho8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.3	9.9	12.2	30.6	15.4	12.5	16.6	41.6	39	62
	4	750	1375	15.1	13.2	16.3	40.7	20.6	16.7	22.1	55.5	52	83
	5	600	1100	18.9	16.5	20.4	50.9	25.7	20.9	27.6	69.4	65	104
	7	429	786	26.2	22.8	28.2	70.6	35.6	28.9	38.3	96.1	65	104
	8	375	688	30.0	26.1	32.3	80.6	40.7	33.0	43.8	109.8	50	80
	10	300	550	36.7	32.0	39.5	98.7	49.8	40.4	53.6	134.4	38	61
2-stage	9	333	611	33.7	29.4	36.3	90.7	45.8	37.2	49.2	123.6	117	187
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	120	192
	15	200	367	55.6	48.5	59.9	149.6	75.5	61.3	81.2	203.8	110	176
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	120	192
	20	150	275	74.1	64.6	79.8	199.5	100.7	81.7	108.3	271.7	120	192
	25	120	220	92.6	80.8	99.8	249.4	125.9	102.1	135.4	339.6	110	176
	32	94	172	118.6	103.4	127.7	319.2	161.1	130.7	173.3	434.7	120	192
	40	75	138	146.6	127.8	157.9	394.8	-	161.7	214.3	537.7	110	176
	64	47	86	-	-	-	-	-	-	-	-	50	80

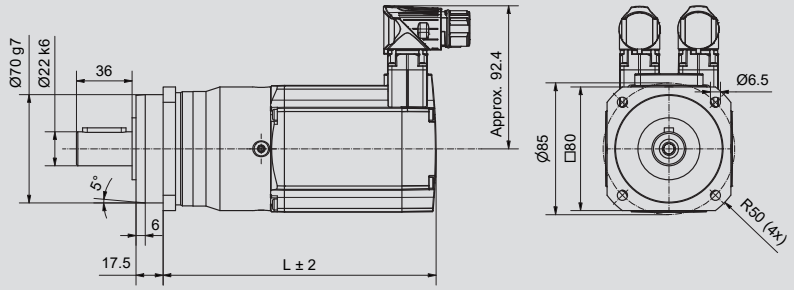
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…H08	without brake	1-stage	176.5	198.5	4.80	2-stage	194.5	216.5	5.30
	with brake		225.0	247.0	5.45		243.0	265.0	5.95
HMD08-032-…H08	without brake		191.5	213.5	5.20		209.5	231.5	5.70
	with brake		240.0	262.0	5.85		258.0	280.0	6.35
HMD08-042-…H08	without brake		206.5	228.5	5.60		224.5	246.5	6.10
	with brake		255.0	277.0	6.25		273.0	295.0	6.75
HMD08-057-…H08	without brake		236.5	258.5	6.70		254.5	276.5	7.20
	with brake		285.0	307.0	7.35		303.0	325.0	7.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…H08		HMD08-032-…H08		HMD08-042-…H08		HMD08-057-…H08	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	1.23E+00	+2.40E-01	1.56E+00	+2.40E-01	1.89E+00	+2.40E-01	2.55E+00	+2.40E-01
	4	9.97E-01		1.33E+00		1.66E+00		2.32E+00	
	5	9.23E-01		1.25E+00		1.58E+00		2.24E+00	
	7	8.58E-01		1.19E+00		1.52E+00		2.18E+00	
	8	8.44E-01		1.17E+00		1.50E+00		2.16E+00	
	10	8.27E-01		1.16E+00		1.49E+00		2.15E+00	
2-stage	9	1.10E+00		1.43E+00		1.76E+00		2.42E+00	
	12	1.07E+00		1.40E+00		1.73E+00		2.39E+00	
	15	9.70E-01		1.30E+00		1.63E+00		2.29E+00	
	16	9.17E-01		1.25E+00		1.58E+00		2.24E+00	
	20	8.72E-01		1.20E+00		1.53E+00		2.19E+00	
	25	8.69E-01		1.20E+00		1.53E+00		2.19E+00	
	32	8.27E-01		1.16E+00		1.49E+00		2.15E+00	
	40	8.26E-01		1.16E+00		1.49E+00		2.15E+00	
	64	8.26E-01		1.16E+00		1.49E+00		2.15E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information".
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear Ho8

Stall, rated and peak torque - M [Nm]

				HMD10-039-...Ho8[1]				HMD10-057-...Ho8[1]				Gear Ho8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.5	9.3	11.3	28.5	15.1	11.6	16.6	41.6	39	62
	4	750	1250	14.0	12.4	15.1	38.0	20.2	15.5	22.1	55.5	52	83
	5	600	1000	17.5	15.5	18.9	47.5	25.2	19.4	27.6	69.4	65	104
	7	429	714	24.2	21.5	26.2	65.9	34.9	26.9	38.3	96.1	65	104
	8	375	625	27.6	24.6	30.0	75.3	39.9	30.7	43.8	109.8	50	80
	10	300	500	33.8	30.1	36.7	92.1	48.9	37.6	53.6	134.4	38	61
2-stage	9	333	556	31.1	27.6	33.7	84.7	44.9	34.6	49.2	123.6	117	187
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	120	192
	15	200	333	51.3	45.6	55.6	139.7	74.1	57.0	81.2	203.8	110	176
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	120	192
	20	150	250	68.4	60.8	74.1	186.2	98.8	76.0	108.3	271.7	120	192
	25	120	200	85.5	76.0	92.6	232.8	123.5	95.0	135.4	339.6	110	176
	32	94	156	109.4	97.3	118.6	297.9	158.1	121.6	173.3	434.7	120	192
	40	75	125	135.4	120.3	146.6	368.5	-	150.4	214.3	537.7	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

				HMD10-076-...Ho8[1]				HMD10-105-...Ho8[1]				Gear Ho8[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	18.9	14.0	22.1	55.3	25.0	16.0	30.6	76.5	39	62
	4	750	1250	25.2	18.6	29.5	73.7	33.4	21.3	40.7	102.0	52	83
	5	600	1000	31.5	23.3	36.9	92.2	41.7	26.7	50.9	127.6	65	104
	7	429	714	43.7	32.3	51.1	127.7	57.8	37.0	70.6	176.7	65	104
	8	375	625	49.9	36.9	58.4	145.9	66.0	42.2	80.6	202.0	50	80
	10	300	500	-	45.1	71.4	178.6	-	51.7	98.7	247.2	38	61
2-strage	9	333	556	56.2	41.5	65.7	164.2	74.3	47.5	90.7	227.2	117	187
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	120	192
	15	200	333	92.6	68.4	108.3	270.8	122.6	78.4	149.6	374.8	110	176
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	120	192
	20	150	250	123.5	91.2	144.4	361.0	163.4	104.5	199.5	499.7	120	192
	25	120	200	154.4	114.0	180.5	451.3	-	130.6	249.4	624.6	110	176
	32	94	156	-	145.9	231.0	577.6	-	167.2	319.2	799.5	120	192
	40	75	125	-	-	-	-	-	-	-	-	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

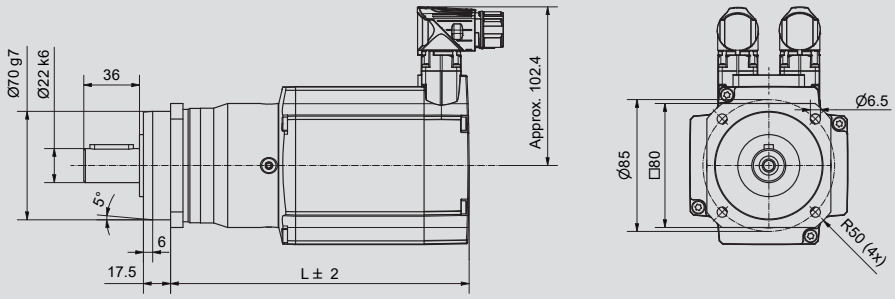
We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions

Details feather key and center hole please see page 68



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…H08	without brake	1-stage	192.7	213.7	6.80	2-stage	210.7	231.7	7.30
	with brake		239.7	260.7	7.80		257.7	278.7	8.30
HMD10-057-…H08	without brake		207.7	228.7	7.30		225.7	246.7	7.80
	with brake		254.7	275.7	8.30		272.7	293.7	8.80
HMD10-076-…H08	without brake		222.7	243.7	7.80		240.7	261.7	8.30
	with brake		269.7	290.7	8.80		287.7	308.7	9.30
HMD10-105-…H08	without brake		252.7	273.7	8.80		270.7	291.7	9.30
	with brake		299.7	320.7	9.80		317.7	338.7	10.30

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-...H08		HMD10-057-...H08		HMD10-076-...H08		HMD10-105-...H08	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.37E+00	+6.80E-01	3.18E+00	+6.80E-01	4.00E+00	+6.80E-01	5.64E+00	+6.80E-01
	4	2.14E+00		2.95E+00		3.77E+00		5.41E+00	
	5	2.06E+00		2.87E+00		3.69E+00		5.33E+00	
	7	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
	8	1.98E+00		2.79E+00		3.61E+00		5.25E+00	
	10	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
2-stage	9	2.24E+00		3.05E+00		3.87E+00		5.51E+00	
	12	2.21E+00		3.02E+00		3.84E+00		5.48E+00	
	15	2.11E+00		2.92E+00		3.74E+00		5.38E+00	
	16	2.06E+00		2.87E+00		3.69E+00		5.33E+00	
	20	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	25	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	32	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	40	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	64	1.97E+00		2.78E+00		3.60E+00		5.24E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode with purely pulsating load.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD06-011 /-019 /-026
Gear F06

Stall, rated and peak torque - M [Nm]

				HMD06-011-...F06[1]				HMD06-019-...F06[1]				Gear F06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	2.9	2.9	2.9	7.3	4.9	4.2	5.5	14.0	17	27.5
	4	750	1500	3.9	3.9	3.9	9.7	6.6	5.6	7.4	18.6	23	37
	5	600	1200	4.9	4.9	4.9	12.1	8.2	7.0	9.2	23.3	29	46
	7	429	857	6.7	6.7	6.7	16.8	11.4	9.7	12.8	32.3	25	40
	8	375	750	7.6	7.6	7.6	19.0	12.9	11.0	14.4	36.5	18	29
	10	300	600	9.4	9.4	9.4	23.5	16.0	13.6	17.9	45.1	15	24
2-stage	9	333	667	8.6	8.6	8.6	21.6	14.7	12.5	16.4	41.5	44	70
	12	250	500	11.5	11.5	11.5	28.8	19.6	16.7	21.9	55.3	44	70
	15	200	400	14.4	14.4	14.4	36.0	24.5	20.9	27.4	69.1	44	70
	16	188	375	15.2	15.2	15.2	38.0	25.8	22.0	28.9	73.0	44	70
	20	150	300	19.0	19.0	19.0	47.5	32.3	27.6	36.1	91.2	44	70
	25	120	240	23.8	23.8	23.8	59.4	40.4	34.4	45.1	114.0	40	64
	32	94	188	30.1	30.1	30.1	75.2	51.1	43.6	57.2	144.4	44	70
	40	75	150	37.2	37.2	37.2	93.0	-	53.9	70.7	178.6	40	64
	64	47	94	55.0	55.0	55.0	137.6	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

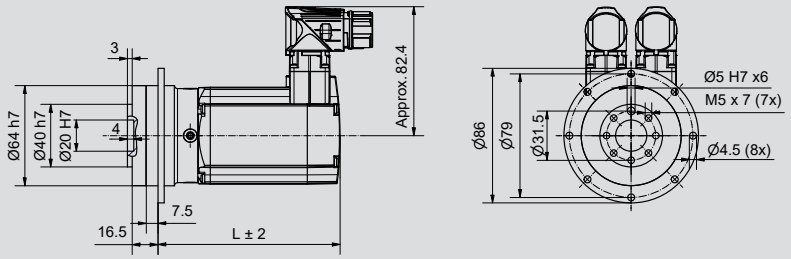
				HMD06-026-...F06[1]				Gear F06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	2000	7.3	5.8	7.6	18.9	17	27.5
	4	750	1500	9.7	7.8	10.1	25.2	23	37
	5	600	1200	12.1	9.7	12.6	31.5	29	46
	7	429	857	16.8	13.4	17.5	43.7	25	40
	8	375	750	19.0	15.2	19.8	49.4	18	29
	10	300	600	-	18.8	24.4	61.1	15	24
2-stage	9	333	667	21.6	17.3	22.5	56.2	44	70
	12	250	500	28.8	23.0	30.0	74.9	44	70
	15	200	400	36.0	28.8	37.4	93.6	44	70
	16	188	375	38.0	30.4	39.5	98.8	44	70
	20	150	300	47.5	38.0	49.4	123.5	44	70
	25	120	240	59.4	47.5	61.8	154.4	40	64
	32	94	188	-	60.2	78.2	195.5	44	70
	40	75	150	-	-	-	-	40	64
	64	47	94	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…F06	without brake	1-stage	116.5	134.5	2.00	2-stage	129.0	147.0	2.40
	with brake		156.0	174.0	2.35		168.5	186.5	2.75
HMD06-019-…F06	without brake		141.5	159.5	2.40		154.0	172.0	2.80
	with brake		181.0	199.0	2.75		193.5	211.5	3.15
HMD06-026-…F06	without brake		171.5	189.5	2.80		184.0	202.0	3.20
	with brake		211.0	229.0	3.15		223.5	241.5	3.55

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-...F06		HMD06-019-...F06		HMD06-026-...F06	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	4.17E-01	+8.90E-02	6.38E-01	+8.90E-02	8.60E-01	+8.90E-02
	4	3.45E-01		5.66E-01		7.88E-01	
	5	3.16E-01		5.37E-01		7.59E-01	
	7	2.92E-01		5.13E-01		7.35E-01	
	8	2.86E-01		5.07E-01		7.29E-01	
	10	2.79E-01		5.00E-01		7.22E-01	
2-stage	9	3.37E-01		5.58E-01		7.80E-01	
	12	3.30E-01		5.51E-01		7.73E-01	
	15	2.87E-01		5.08E-01		7.30E-01	
	16	2.95E-01		5.16E-01		7.38E-01	
	20	2.84E-01		5.05E-01		7.27E-01	
	25	2.83E-01		5.04E-01		7.26E-01	
	32	2.74E-01		4.95E-01		7.17E-01	
	40	2.74E-01		4.95E-01		7.17E-01	
	64	2.73E-01		4.94E-01		7.16E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear F06

Stall, rated and peak torque - M [Nm]

				HMD08-024-...F06[1]				HMD08-032-...F06[1]				Gear F06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.7	6.1	7.0	17.5	8.7	7.6	9.3	23.3	17	27.5
	4	750	1375	8.9	8.1	9.3	23.3	11.6	10.1	12.4	31.0	23	37
	5	600	1100	11.2	10.2	11.6	29.1	14.6	12.6	15.5	38.8	29	46
	7	429	786	15.5	14.1	16.1	40.3	20.2	17.5	21.5	53.8	25	40
	8	375	688	17.5	16.0	18.2	45.6	22.8	19.8	24.3	60.8	18	29
	10	300	550	21.6	19.7	22.6	56.4	-	-	-	-	15	24
2-stage	9	333	611	19.9	18.1	20.7	51.8	25.9	22.5	27.6	69.1	44	70
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	44	70
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	44	70
	16	188	344	35.0	31.9	36.5	91.2	45.6	39.5	48.6	121.6	44	70
	20	150	275	43.7	39.9	45.6	114.0	57.0	49.4	60.8	152.0	44	70
	25	120	220	54.6	49.9	57.0	142.5	-	-	-	-	40	64
	32	94	172	-	63.2	72.2	180.5	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

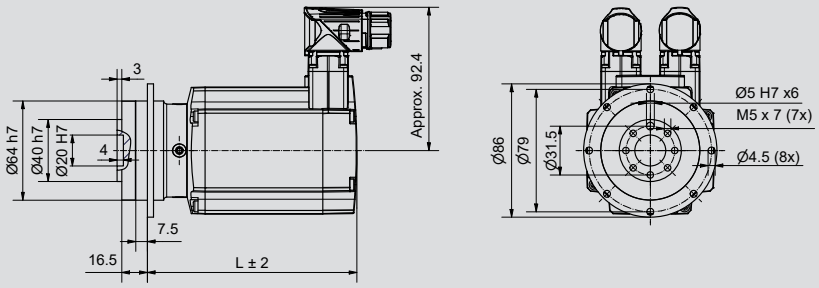
				HMD08-042-...F06[1]				HMD08-057-...F06[1]				Gear F06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.3	9.9	12.2	30.6	15.4	12.5	16.6	41.6	17	27.5
	4	750	1375	15.1	13.2	16.3	40.7	20.6	16.7	22.1	55.5	23	37
	5	600	1100	18.9	16.5	20.4	50.9	25.7	20.9	27.6	69.4	29	46
	7	429	786	26.2	22.8	28.2	70.6	35.6	28.9	38.3	96.1	25	40
	8	375	688	-	25.8	31.9	79.8	-	-	-	-	18	29
	10	300	550	-	-	-	-	-	-	-	-	15	24
2-stage	9	333	611	33.7	29.4	36.3	90.7	45.8	37.2	49.2	123.6	44	70
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	44	70
	15	200	367	56.2	49.0	60.5	151.2	-	61.9	82.1	205.9	44	70
	16	188	344	59.3	51.7	63.8	159.6	-	65.4	86.6	217.4	44	70
	20	150	275	-	64.6	79.8	199.5	-	-	-	-	44	70
	25	120	220	-	-	-	-	-	-	-	-	40	64
	32	94	172	-	-	-	-	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…F06	without brake	1-stage	135.3	157.3	3.30	2-stage	147.8	169.8	3.70
	with brake		183.8	205.8	3.95		196.3	218.3	4.35
HMD08-032-…F06	without brake		150.3	172.3	3.70		162.8	184.8	4.10
	with brake		198.8	220.8	4.35		211.3	233.3	4.75
HMD08-042-…F06	without brake		165.3	187.3	4.10		177.8	199.8	4.50
	with brake		213.8	235.8	4.75		226.3	248.3	5.15
HMD08-057-…F06	without brake		195.3	217.3	5.20		207.8	229.8	5.60
	with brake		243.8	265.8	5.85		256.3	278.3	6.25

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…F06		HMD08-032-…F06		HMD08-042-…F06		HMD08-057-…F06	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	9.49E-01	+2.40E-01	1.28E+00	+2.40E-01	1.61E+00	+2.40E-01	2.27E+00	+2.40E-01
	4	8.77E-01		1.21E+00		1.54E+00		2.20E+00	
	5	8.48E-01		1.18E+00		1.51E+00		2.17E+00	
	7	8.24E-01		1.15E+00		1.48E+00		2.14E+00	
	8	8.18E-01		1.15E+00		1.48E+00		2.14E+00	
	10	8.11E-01		1.14E+00		1.47E+00		2.13E+00	
2-stage	9	8.69E-01		1.20E+00		1.53E+00		2.19E+00	
	12	8.62E-01		1.19E+00		1.52E+00		2.18E+00	
	15	8.19E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.27E-01		1.16E+00		1.49E+00		2.15E+00	
	20	8.16E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.15E-01		1.15E+00		1.48E+00		2.14E+00	
	32	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.05E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMDo8-024 /-032 /-042 /-057
Gear Fo9

Stall, rated and peak torque - M [Nm]

				HMDo8-024-...Fo9[1]				HMDo8-032-...Fo9[1]				Gear Fo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	6.8	6.2	7.1	17.6	8.8	7.6	9.4	23.5	39	62
	4	750	1375	9.0	8.2	9.4	23.5	11.8	10.2	12.5	31.4	52	83
	5	600	1100	11.3	10.3	11.8	29.4	14.7	12.7	15.7	39.2	65	104
	7	429	786	15.6	14.3	16.3	40.7	20.4	17.7	21.7	54.3	65	104
	8	375	688	17.7	16.1	18.4	46.1	23.0	20.0	24.6	61.4	50	80
	10	300	550	21.9	20.0	22.8	57.0	28.5	24.7	30.4	76.0	38	61
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	117	187
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	120	192
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	110	176
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	120	192
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	120	192
	25	120	220	54.6	49.9	57.0	142.5	71.3	61.8	76.0	190.0	110	176
	32	94	172	69.9	63.8	73.0	182.4	91.2	79.0	97.3	243.2	120	192
	40	75	138	86.5	79.0	90.2	225.6	112.8	97.8	120.3	300.8	110	176
	64	47	86	129.5	118.3	135.2	337.9	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

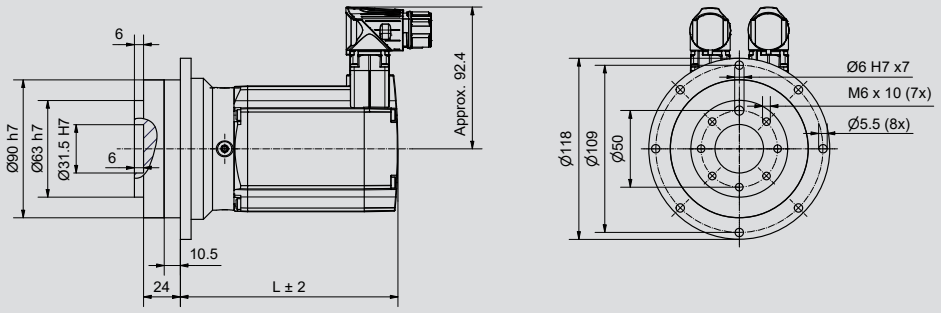
				HMDo8-042-...Fo9[1]				HMDo8-057-...Fo9[1]				Gear Fo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1833	11.5	10.0	12.3	30.9	15.6	12.6	16.8	42.0	39	62
	4	750	1375	15.3	13.3	16.5	41.2	20.8	16.9	22.3	56.1	52	83
	5	600	1100	19.1	16.7	20.6	51.5	26.0	21.1	27.9	70.1	65	104
	7	429	786	26.5	23.1	28.5	71.3	36.0	29.2	38.7	97.1	65	104
	8	375	688	30.0	26.1	32.3	80.6	40.7	33.0	43.8	109.8	50	80
	10	300	550	37.1	32.3	39.9	99.8	50.4	40.9	54.2	135.9	38	61
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	117	187
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	120	192
	15	200	367	56.2	49.0	60.5	151.2	76.3	61.9	82.1	205.9	110	176
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	120	192
	20	150	275	74.9	65.3	80.6	201.6	101.8	82.6	109.4	274.6	120	192
	25	120	220	92.6	80.8	99.8	249.4	125.9	102.1	135.4	339.6	110	176
	32	94	172	118.6	103.4	127.7	319.2	161.1	130.7	173.3	434.7	120	192
	40	75	138	146.6	127.8	157.9	394.8	-	161.7	214.3	537.7	110	176
	64	47	86	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…F09	without brake	1-stage	142.0	164.0	4.80	2-stage	159.5	181.5	5.30
	with brake		190.5	212.5	5.45		208.0	230.0	5.95
HMD08-032-…F09	without brake		157.0	179.0	5.20		174.5	196.5	5.70
	with brake		205.5	227.5	5.85		223.0	245.0	6.35
HMD08-042-…F09	without brake		172.0	194.0	5.60		189.5	211.5	6.10
	with brake		220.5	242.5	6.25		238.0	260.0	6.75
HMD08-057-…F09	without brake		202.0	224.0	6.70		219.5	241.5	7.20
	with brake		250.5	272.5	7.35		268.0	290.0	7.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…F09		HMD08-032-…F09		HMD08-042-…F09		HMD08-057-…F09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	1.62E+00	+2.40E-01	1.95E+00	+2.40E-01	2.28E+00	+2.40E-01	2.94E+00	+2.40E-01
	4	1.22E+00		1.55E+00		1.88E+00		2.54E+00	
	5	1.07E+00		1.40E+00		1.73E+00		2.39E+00	
	7	9.31E-01		1.26E+00		1.59E+00		2.25E+00	
	8	9.00E-01		1.23E+00		1.56E+00		2.22E+00	
	10	8.63E-01		1.19E+00		1.52E+00		2.18E+00	
2-stage	9	1.12E+00		1.45E+00		1.78E+00		2.44E+00	
	12	1.08E+00		1.41E+00		1.74E+00		2.40E+00	
	15	1.06E+00		1.39E+00		1.72E+00		2.38E+00	
	16	9.22E-01		1.25E+00		1.58E+00		2.24E+00	
	20	8.75E-01		1.21E+00		1.54E+00		2.20E+00	
	25	8.67E-01		1.20E+00		1.53E+00		2.19E+00	
	32	8.28E-01		1.16E+00		1.49E+00		2.15E+00	
	40	8.26E-01		1.16E+00		1.49E+00		2.15E+00	
	64	8.25E-01		1.16E+00		1.49E+00		2.15E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear Fo9

Stall, rated and peak torque - M [Nm]

				HMD10-039-...Fo9[1]				HMD10-057-...Fo9[1]				Gear Fo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	10.6	9.4	11.5	28.8	15.3	11.8	16.8	42.0	39	62
	4	750	1250	14.1	12.5	15.3	38.4	20.4	15.7	22.3	56.1	52	83
	5	600	1000	17.6	15.7	19.1	48.0	25.5	19.6	27.9	70.1	65	104
	7	429	714	24.4	21.7	26.5	66.5	35.3	27.2	38.7	97.1	65	104
	8	375	625	27.6	24.6	30.0	75.3	39.9	30.7	43.8	109.8	50	80
	10	300	500	34.2	30.4	37.1	93.1	49.4	38.0	54.2	135.9	38	61
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	117	187
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	120	192
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	110	176
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	120	192
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	120	192
	25	120	200	85.5	76.0	92.6	232.8	123.5	95.0	135.4	339.6	110	176
	32	94	156	109.4	97.3	118.6	297.9	158.1	121.6	173.3	434.7	120	192
	40	75	125	135.4	120.3	146.6	368.5	-	150.4	214.3	537.7	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

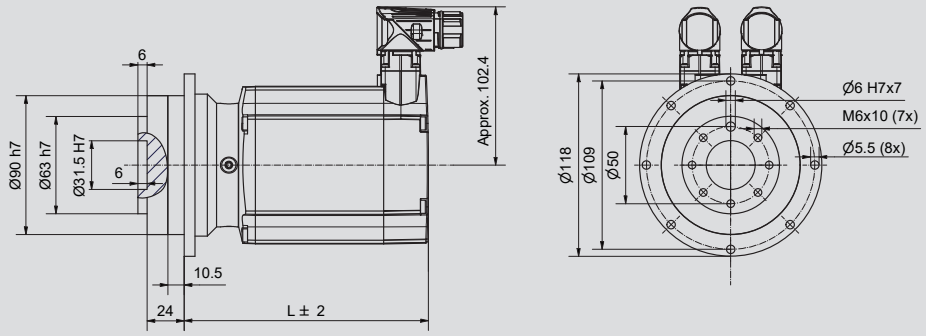
				HMD10-076-...Fo9[1]				HMD10-105-...Fo9[1]				Gear Fo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	3	1000	1667	19.1	14.1	22.3	55.9	25.3	16.2	30.9	77.3	39	62
	4	750	1250	25.5	18.8	29.8	74.5	33.7	21.6	41.2	103.1	52	83
	5	600	1000	31.9	23.5	37.2	93.1	42.1	27.0	51.5	128.9	65	104
	7	429	714	44.1	32.6	51.6	129.0	58.4	37.3	71.3	178.6	65	104
	8	375	625	49.9	36.9	58.4	145.9	66.0	42.2	80.6	202.0	50	80
	10	300	500	-	45.6	72.2	180.5	-	52.3	99.8	249.9	38	61
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	117	187
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	120	192
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	110	176
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	120	192
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	120	192
	25	120	200	154.4	114.0	180.5	451.3	-	130.6	249.4	624.6	110	176
	32	94	156	-	145.9	231.0	577.6	-	167.2	319.2	799.5	120	192
	40	75	125	-	-	-	-	-	-	-	-	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…F09	without brake	1-stage	158.2	179.2	6.80	2-stage	175.7	196.7	7.30
	with brake		205.2	226.2	7.80		222.7	243.7	8.30
HMD10-057-…F09	without brake		173.2	194.2	7.30		190.7	211.7	7.80
	with brake		220.2	241.2	8.30		237.7	258.7	8.80
HMD10-076-…F09	without brake		188.2	209.2	7.80		205.7	226.7	8.30
	with brake		235.2	256.2	8.80		252.7	273.7	9.30
HMD10-105-…F09	without brake		218.2	239.2	8.80		235.7	256.7	9.30
	with brake		265.2	286.2	9.80		282.7	303.7	10.30

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…F09		HMD10-057-…F09		HMD10-076-…F09		HMD10-105-…F09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	3	2.76E+00	+6.80E-01	3.57E+00	+6.80E-01	4.39E+00	+6.80E-01	6.03E+00	+6.80E-01
	4	2.36E+00		3.17E+00		3.99E+00		5.63E+00	
	5	2.21E+00		3.02E+00		3.84E+00		5.48E+00	
	7	2.07E+00		2.88E+00		3.70E+00		5.34E+00	
	8	2.04E+00		2.85E+00		3.67E+00		5.31E+00	
	10	2.00E+00		2.81E+00		3.63E+00		5.27E+00	
2-stage	9	2.26E+00		3.07E+00		3.89E+00		5.53E+00	
	12	2.22E+00		3.03E+00		3.85E+00		5.49E+00	
	15	2.20E+00		3.01E+00		3.83E+00		5.47E+00	
	16	2.06E+00		2.87E+00		3.69E+00		5.33E+00	
	20	2.02E+00		2.83E+00		3.65E+00		5.29E+00	
	25	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	32	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	40	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	64	1.97E+00		2.78E+00		3.60E+00		5.24E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD06-011 /-019 /-026
Gear V06

Stall, rated and peak torque - M [Nm]

				HMD06-011-...V06[1]				HMD06-019-...V06[1]				Gear V06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	667	8.6	8.6	8.6	21.6	14.7	12.5	16.4	41.5	44	70
	12	250	500	11.5	11.5	11.5	28.8	19.6	16.7	21.9	55.3	44	70
	15	200	400	14.4	14.4	14.4	36.0	24.5	20.9	27.4	69.1	44	70
	16	188	375	15.2	15.2	15.2	38.0	25.8	22.0	28.9	73.0	44	70
	20	150	300	19.0	19.0	19.0	47.5	32.3	27.6	36.1	91.2	44	70
	25	120	240	23.8	23.8	23.8	59.4	40.4	34.4	45.1	114.0	40	64
	32	94	188	30.4	30.4	30.4	76.0	51.7	44.1	57.8	145.9	44	70
	40	75	150	38.0	38.0	38.0	95.0	-	55.1	72.2	182.4	40	64
	64	47	94	58.2	58.2	58.2	145.6	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

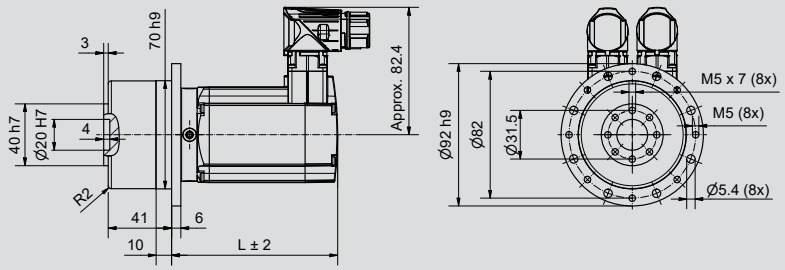
				HMD06-026-...V06[1]				Gear V06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,6000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,6000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
2-stage	9	333	667	21.6	17.3	22.5	56.2	44	70
	12	250	500	28.8	23.0	30.0	74.9	44	70
	15	200	400	36.0	28.8	37.4	93.6	44	70
	16	188	375	38.0	30.4	39.5	98.8	44	70
	20	150	300	47.5	38.0	49.4	123.5	44	70
	25	120	240	59.4	47.5	61.8	154.4	40	64
	32	94	188	-	60.8	79.0	197.6	44	70
	40	75	150	-	-	-	-	40	64
	64	47	94	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD06-011-…V06	without brake	1-stage	-	-	-	2-stage	107.5	125.5	2.40
	with brake		-	-	-		147.0	165.0	2.75
HMD06-019-…V06	without brake		-	-	-		132.5	150.5	2.80
	with brake		-	-	-		172.0	190.0	3.15
HMD06-026-…V06	without brake		-	-	-		162.5	180.5	3.20
	with brake		-	-	-		202.0	220.0	3.55

Moment of inertia 5) - J_1 [kg-cm²]

		HMD06-011-…V06		HMD06-019-…V06		HMD06-026-…V06	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+8.90E-02	-	+8.90E-02	-	+8.90E-02
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
2-stage	9	3.39E-01		5.60E-01		7.82E-01	
	12	3.31E-01		5.52E-01		7.74E-01	
	15	2.88E-01		5.09E-01		7.31E-01	
	16	2.96E-01		5.17E-01		7.39E-01	
	20	2.85E-01		5.06E-01		7.28E-01	
	25	2.84E-01		5.05E-01		7.27E-01	
	32	2.74E-01		4.95E-01		7.17E-01	
	40	2.74E-01		4.95E-01		7.17E-01	
	64	2.73E-01		4.94E-01		7.16E-01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gearrated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear V06

Stall, rated and peak torque - M [Nm]

				HMD08-024-...V06[1]				HMD08-032-...V06[1]				Gear V06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	611	19.9	18.1	20.7	51.8	25.9	22.5	27.6	69.1	44	70
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	44	70
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	44	70
	16	188	344	35.0	31.9	36.5	91.2	45.6	39.5	48.6	121.6	44	70
	20	150	275	43.7	39.9	45.6	114.0	57.0	49.4	60.8	152.0	44	70
	25	120	220	54.6	49.9	57.0	142.5	-	-	-	-	40	64
	32	94	172	-	63.8	73.0	182.4	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

Stall, rated and peak torque - M [Nm]

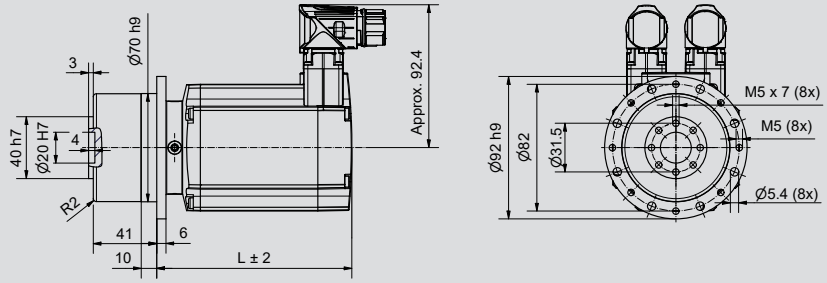
				HMD08-042-...V06[1]				HMD08-057-...V06[1]				Gear V06[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	611	33.7	29.4	36.3	90.7	45.8	37.2	49.2	123.6	44	70
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	44	70
	15	200	367	56.2	49.0	60.5	151.2	-	61.9	82.1	205.9	44	70
	16	188	344	59.3	51.7	63.8	159.6	-	65.4	86.6	217.4	44	70
	20	150	275	-	64.6	79.8	199.5	-	-	-	-	44	70
	25	120	220	-	-	-	-	-	-	-	-	40	64
	32	94	172	-	-	-	-	-	-	-	-	44	70
	40	75	138	-	-	-	-	-	-	-	-	40	64
	64	47	86	-	-	-	-	-	-	-	-	18	29

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…V06	without brake	1-stage	-	-	-	2-stage	126.3	148.3	3.70
	with brake		-	-	-		174.8	196.8	4.35
HMD08-032-…V06	without brake		-	-	-		141.3	163.3	4.10
	with brake		-	-	-		189.8	211.8	4.75
HMD08-042-…V06	without brake		-	-	-		156.3	178.3	4.50
	with brake		-	-	-		204.8	226.8	5.15
HMD08-057-…V06	without brake		-	-	-		186.3	208.3	5.60
	with brake		-	-	-		234.8	256.8	6.25

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-…V06		HMD08-032-…V06		HMD08-042-…V06		HMD08-057-…V06	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+2.40E-01	-	+2.40E-01	-	+2.40E-01	-	+2.40E-01
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
2-stage	9	8.71E-01		1.20E+00		1.53E+00		2.19E+00	
	12	8.63E-01		1.19E+00		1.52E+00		2.18E+00	
	15	8.20E-01		1.15E+00		1.48E+00		2.14E+00	
	16	8.28E-01		1.16E+00		1.49E+00		2.15E+00	
	20	8.17E-01		1.15E+00		1.48E+00		2.14E+00	
	25	8.16E-01		1.15E+00		1.48E+00		2.14E+00	
	32	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	40	8.06E-01		1.14E+00		1.47E+00		2.13E+00	
	64	8.05E-01		1.14E+00		1.47E+00		2.13E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD08-024 /-032 /-042 /-057
Gear Vo9

Stall, rated and peak torque - M [Nm]

				HMD08-024-...Vo9[1]				HMD08-032-...Vo9[1]				Gear Vo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	611	20.1	18.3	21.0	52.4	26.2	22.7	27.9	69.8	117	187
	12	250	458	26.5	24.2	27.6	69.1	34.6	30.0	36.9	92.2	120	192
	15	200	367	33.1	30.2	34.6	86.4	43.2	37.4	46.1	115.2	110	176
	16	188	344	35.3	32.3	36.9	92.2	46.1	39.9	49.2	122.9	120	192
	20	150	275	44.2	40.3	46.1	115.2	57.6	49.9	61.4	153.6	120	192
	25	120	220	55.2	50.4	57.6	144.0	72.0	62.4	76.8	192.0	110	176
	32	94	172	70.7	64.5	73.7	184.3	92.2	79.9	98.3	245.8	120	192
	40	75	138	87.4	79.8	91.2	228.0	114.0	98.8	121.6	304.0	110	176
	64	47	86	136.9	125.0	142.8	357.1	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

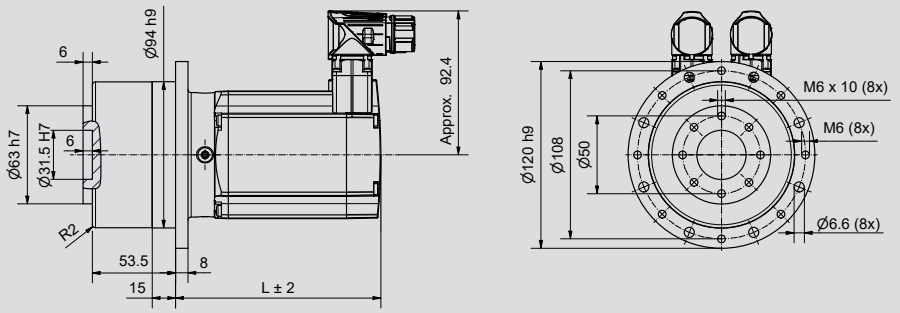
				HMD08-042-...Vo9[1]				HMD08-057-...Vo9[1]				Gear Vo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5500\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5500\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	611	34.0	29.7	36.7	91.7	46.3	37.5	49.8	124.8	117	187
	12	250	458	44.9	39.2	48.4	121.0	61.1	49.5	65.7	164.7	120	192
	15	200	367	56.2	49.0	60.5	151.2	76.3	61.9	82.1	205.9	110	176
	16	188	344	59.9	52.2	64.5	161.3	81.4	66.0	87.6	219.6	120	192
	20	150	275	74.9	65.3	80.6	201.6	101.8	82.6	109.4	274.6	120	192
	25	120	220	93.6	81.6	100.8	252.0	127.2	103.2	136.8	343.2	110	176
	32	94	172	119.8	104.4	129.0	322.6	162.8	132.1	175.1	439.3	120	192
	40	75	138	148.2	129.2	159.6	399.0	-	163.4	216.6	543.4	110	176
	64	47	86	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD08-024-…V09	without brake	1-stage	-	-	-	2-stage	132.0	154.0	5.30
	with brake		-	-	-		180.5	202.5	5.95
HMD08-032-…V09	without brake		-	-	-		147.0	169.0	5.70
	with brake		-	-	-		195.5	217.5	6.35
HMD08-042-…V09	without brake		-	-	-		162.0	184.0	6.10
	with brake		-	-	-		210.5	232.5	6.75
HMD08-057-…V09	without brake		-	-	-		192.0	214.0	7.20
	with brake		-	-	-		240.5	262.5	7.85

Moment of inertia 5) - J_1 [kg-cm²]

		HMD08-024-...V09		HMD08-032-...V09		HMD08-042-...V09		HMD08-057-...V09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+2.40E-01	-	+2.40E-01	-	+2.40E-01	-	+2.40E-01
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
2-stage	9	1.13E+00		1.46E+00		1.79E+00		2.45E+00	
	12	1.09E+00		1.42E+00		1.75E+00		2.41E+00	
	15	1.07E+00		1.40E+00		1.73E+00		2.39E+00	
	16	9.28E-01		1.26E+00		1.59E+00		2.25E+00	
	20	8.80E-01		1.21E+00		1.54E+00		2.20E+00	
	25	8.74E-01		1.20E+00		1.53E+00		2.19E+00	
	32	8.28E-01		1.16E+00		1.49E+00		2.15E+00	
	40	8.26E-01		1.16E+00		1.49E+00		2.15E+00	
	64	8.25E-01		1.16E+00		1.49E+00		2.15E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear Vo9

Stall, rated and peak torque - M [Nm]

				HMD10-039-...Vo9[1]				HMD10-057-...Vo9[1]				Gear Vo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	117	187
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	120	192
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	110	176
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	120	192
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	120	192
	25	120	200	86.4	76.8	93.6	235.2	124.8	96.0	136.8	343.2	110	176
	32	94	156	110.6	98.3	119.8	301.1	159.7	122.9	175.1	439.3	120	192
	40	75	125	136.8	121.6	148.2	372.4	-	152.0	216.6	543.4	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

Stall, rated and peak torque - M [Nm]

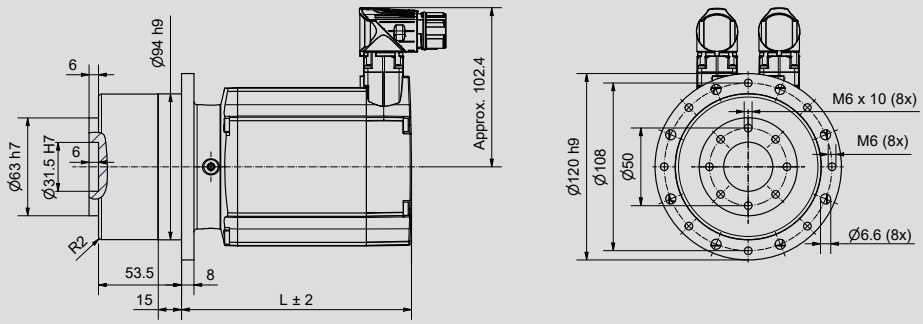
				HMD10-076-...Vo9[1]				HMD10-105-...Vo9[1]				Gear Vo9[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	117	187
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	120	192
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	110	176
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	120	192
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	120	192
	25	120	200	156.0	115.2	182.4	456.0	-	132.0	252.0	631.2	110	176
	32	94	156	-	147.5	233.5	583.7	-	169.0	322.6	807.9	120	192
	40	75	125	-	-	-	-	-	-	-	-	110	176
	64	47	78	-	-	-	-	-	-	-	-	50	80

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-…V09	without brake	1-stage	-	-	-	2-stage	148.2	169.2	7.30
	with brake		-	-	-		195.2	216.2	8.30
HMD10-057-…V09	without brake		-	-	-		163.2	184.2	7.80
	with brake		-	-	-		210.2	231.2	8.80
HMD10-076-…V09	without brake		-	-	-		178.2	199.2	8.30
	with brake		-	-	-		225.2	246.2	9.30
HMD10-105-…V09	without brake		-	-	-		208.2	229.2	9.30
	with brake		-	-	-		255.2	276.2	10.30

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-…V09		HMD10-057-…V09		HMD10-076-…V09		HMD10-105-…V09	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+6.80E-01	-	+6.80E-01	-	+6.80E-01	-	+6.80E-01
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
2-stage	9	2.27E+00		3.08E+00		3.90E+00		5.54E+00	
	12	2.23E+00		3.04E+00		3.86E+00		5.50E+00	
	15	2.21E+00		3.02E+00		3.84E+00		5.48E+00	
	16	2.07E+00		2.88E+00		3.70E+00		5.34E+00	
	20	2.02E+00		2.83E+00		3.65E+00		5.29E+00	
	25	2.01E+00		2.82E+00		3.64E+00		5.28E+00	
	32	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	40	1.97E+00		2.78E+00		3.60E+00		5.24E+00	
	64	1.97E+00		2.78E+00		3.60E+00		5.24E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD10-039 /-057 /-076 /-105
Gear V10

Stall, rated and peak torque - M [Nm]

				HMD10-039-...V10[1]				HMD10-057-...V10[1]				Gear V10[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	556	31.4	27.9	34.0	85.6	45.4	34.9	49.8	124.8	210	336
	12	250	417	41.5	36.9	44.9	112.9	59.9	46.1	65.7	164.7	260	416
	15	200	333	51.8	46.1	56.2	141.1	74.9	57.6	82.1	205.9	230	368
	16	188	313	55.3	49.2	59.9	150.5	79.9	61.4	87.6	219.6	260	416
	20	150	250	69.1	61.4	74.9	188.2	99.8	76.8	109.4	274.6	260	416
	25	120	200	86.4	76.8	93.6	235.2	124.8	96.0	136.8	343.2	230	368
	32	94	156	110.6	98.3	119.8	301.1	159.7	122.9	175.1	439.3	260	416
	40	75	125	138.2	122.9	149.8	376.3	199.7	153.6	218.9	549.1	230	368
	64	47	78	218.9	194.6	237.1	595.8	-	-	-	-	120	192

Stall, rated and peak torque - M [Nm]

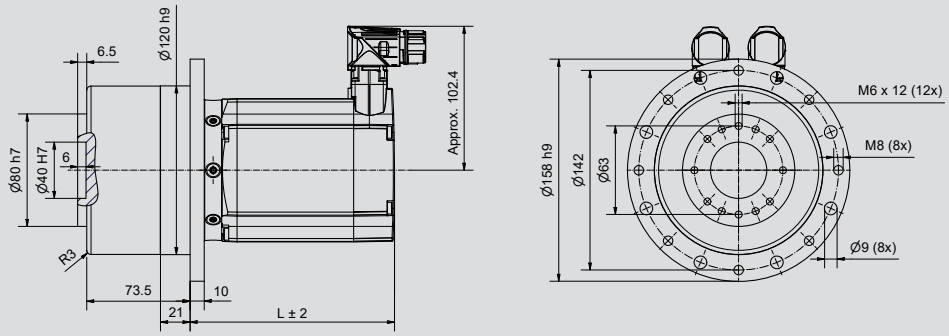
				HMD10-076-...V10[1]				HMD10-105-...V10[1]				Gear V10[2]	
	i	$n_{out,3000\ rpm}$[3]	$n_{out,5000\ rpm}$[3]	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{n,3000\ rpm}$	$M_{n,5000\ rpm}$	M_o	M_{max}	$M_{G,n}$	$M_{G,max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	333	556	56.7	41.9	66.3	165.9	75.1	48.0	91.7	229.6	210	336
	12	250	417	74.9	55.3	87.6	218.9	99.1	63.4	121.0	303.0	260	416
	15	200	333	93.6	69.1	109.4	273.6	123.8	79.2	151.2	378.7	230	368
	16	188	313	99.8	73.7	116.7	291.8	132.1	84.5	161.3	404.0	260	416
	20	150	250	124.8	92.2	145.9	364.8	165.1	105.6	201.6	505.0	260	416
	25	120	200	156.0	115.2	182.4	456.0	206.4	132.0	252.0	631.2	230	368
	32	94	156	199.7	147.5	233.5	583.7	264.2	169.0	322.6	807.9	260	416
	40	75	125	249.6	184.3	291.8	729.6	330.2	211.2	403.2	1009.9	230	368
	64	47	78	-	-	-	-	-	-	-	-	120	192

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

For UL approval, an S1 characteristic curve deviating by approx. 15 % applies.
The specifications on the nameplates correspond to the UL values.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD10-039-...V10	without brake	1-stage	-	-	-	2-stage	145.5	166.5	11.50
	with brake		-	-	-		192.5	213.5	12.50
HMD10-057-...V10	without brake		-	-	-		160.5	181.5	12.00
	with brake		-	-	-		207.5	228.5	13.00
HMD10-076-...V10	without brake		-	-	-		175.5	196.5	12.50
	with brake		-	-	-		222.5	243.5	13.50
HMD10-105-...V10	without brake		-	-	-		205.5	226.5	13.50
	with brake		-	-	-		252.5	273.5	14.50

Moment of inertia 5) - J_1 [kg-cm²]

		HMD10-039-...V10		HMD10-057-...V10		HMD10-076-...V10		HMD10-105-...V10	
	i	without brake	with brake	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+6.80E-01	-	+6.80E-01	-	+6.80E-01	-	+6.80E-01
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
	-	-		-		-		-	
2-stage	9	3.06E+00		3.87E+00		4.69E+00		6.33E+00	
	12	2.93E+00		3.74E+00		4.56E+00		6.20E+00	
	15	2.88E+00		3.69E+00		4.51E+00		6.15E+00	
	16	2.42E+00		3.23E+00		4.05E+00		5.69E+00	
	20	2.23E+00		3.04E+00		3.86E+00		5.50E+00	
	25	2.21E+00		3.02E+00		3.84E+00		5.48E+00	
	32	2.05E+00		2.86E+00		3.68E+00		5.32E+00	
	40	2.04E+00		2.85E+00		3.67E+00		5.31E+00	
	64	2.03E+00		2.84E+00		3.66E+00		5.30E+00	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gear rated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information".
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Motor type HMD13-133 /-190 /-245
Gear V10

Stall, rated and peak torque - M [Nm]

				HMD13-133-...V10[1]				HMD13-190-...V10[1]				Gear V10[2]	
	i	$n_{out,\ 2000\ rpm}$[3]	$n_{out,\ 3600\ rpm}$[3]	$M_{n,\ 2000\ rpm}$	$M_{n,\ 3600\ rpm}$	M_o	M_{max}	$M_{n,\ 2000\ rpm}$	$M_{n,\ 3600\ rpm}$	M_o	M_{max}	$M_{G,\ n}$	$M_{G,\ max}$
1-stage	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
2-stage	9	222	400	100.4	78.6	116.1	290.7	139.7	97.8	165.9	414.7	210	336
	12	167	300	132.5	103.7	153.2	383.6	184.3	129.0	218.9	547.2	260	416
	15	133	240	165.6	129.6	191.5	479.5	230.4	161.3	273.6	684.0	230	368
	16	125	225	176.6	138.2	204.3	511.5	245.8	172.0	291.8	729.6	260	416
	20	100	180	220.8	172.8	255.4	639.4	307.2	215.0	364.8	912.0	260	416
	25	80	144	276.0	216.0	319.2	799.2	-	268.8	456.0	1140.0	230	368
	32	63	113	353.3	276.5	408.6	1023.0	-	344.1	583.7	1459.2	260	416
	40	50	90	-	-	-	-	-	-	-	-	230	368
	64	31	56	-	-	-	-	-	-	-	-	120	192

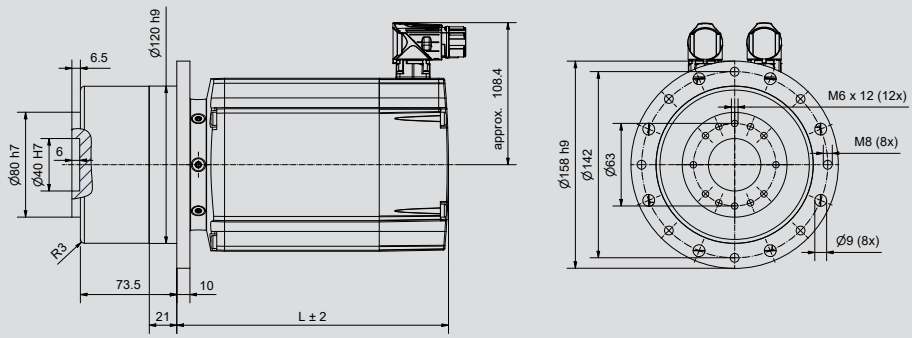
Stall, rated and peak torque - M [Nm]

				HMD13-245-...V10[1]				Gear V10[2]	
	i	$n_{out,\ 2000\ rpm}$[3]	$n_{out,\ 3600\ rpm}$[3]	$M_{n,\ 2000\ rpm}$	$M_{n,\ 3600\ rpm}$	M_o	M_{max}	$M_{G,\ n}$	$M_{G,\ max}$
1-stage	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
2-stage	9	222	400	179.0	116.1	213.9	535.1	210	336
	12	167	300	236.2	153.2	282.2	706.2	260	416
	15	133	240	295.2	191.5	352.8	882.7	230	368
	16	125	225	314.9	204.3	376.3	941.6	260	416
	20	100	180	-	255.4	470.4	1177.0	260	416
	25	80	144	-	319.2	588.0	1471.2	230	368
	32	63	113	-	-	-	-	260	416
	40	50	90	-	-	-	-	230	368
	64	31	56	-	-	-	-	120	192

We refer to pages 4 and 5 to compile the type code correctly.

When selecting the drive, please note that your required application torques must not exceed the corresponding values of either the motor-gear combination or the gear alone listed in the table. The respective lower value of combination or gear unit alone is the limiting value.

Dimensions



Motor type		Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]	Stage	L_{short} [mm] 4)	L_{long} [mm] 4)	m [kg]
HMD13-133-…V10	without brake	1-stage	-	-	-	2-stage	-	207.3	15.40
	with brake		-	-	-		-	245.0	16.50
HMD13-190-…V10	without brake		-	-	-		-	237.3	18.00
	with brake		-	-	-		-	275.0	19.10
HMD13-245-…V10	without brake		-	-	-		-	267.3	20.50
	with brake		-	-	-		-	328.3	23.50

Moment of inertia 5) - J_1 [kg-cm²]

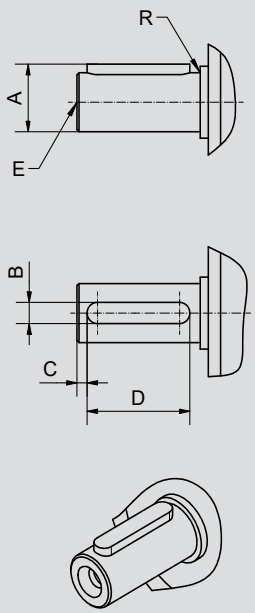
		HMD13-133-…V10		HMD13-190-…V10		HMD13-245-…V10	
	i	without brake	with brake	without brake	with brake	without brake	with brake
1-stage	-	-	+1.90E+00	-	+1.90E+00	-	+7.40E+00
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
	-	-		-		-	
2-stage	9	9.32E+00		1.31E+01		1.69E+01	
	12	9.19E+00		1.30E+01		1.68E+01	
	15	9.14E+00		1.29E+01		1.67E+01	
	16	8.68E+00		1.25E+01		1.63E+01	
	20	8.49E+00		1.23E+01		1.61E+01	
	25	8.47E+00		1.23E+01		1.61E+01	
	32	8.31E+00		1.21E+01		1.59E+01	
	40	8.30E+00		1.21E+01		1.59E+01	
	64	8.29E+00		1.21E+01		1.59E+01	

1) Data calculated with a gear efficiency grade defined at n_n=1000rpm and the gearrated torque and a reference temperature of 70°C.
2) Data refer to an output shaft speed of n_{out}=100rpm and an application factor Ka=1 as well as S1 operating mode.
3) Observe the notes on the average thermal input speed of the gear in chapter „Technical data and additional information“.
4) Short version only possible with resolver, ECI1118, SEK/SEL 37, HESx / HEMx, HS/M 16 and only for versions with U_{zk} = 320/560 V_{DC}. With other encoder / voltage variant, only the long version is possible.
5) Mass moments of inertia incl. gear and motor refer to the motor output shaft (additionally with brake by summation of the specified value).

Overview output shaft and feather key

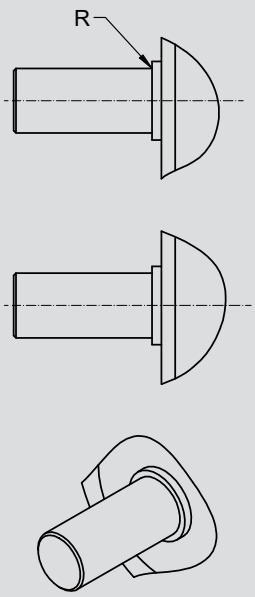
Option drive - with feather key

Feather keys according to DIN6885, Form A + Centering hole according to DIN332, Form DR



Option drive - without feather key

Design with smooth shaft and without centering hole



Gear type	Feather key				E (center hole according to DIN 332, form DR)	Max. Radius R
	A	B	C	D		
E06	16	5h9	2.5	25	M5 x 12,5	0.6
E07	18	5h9	4	20	M5 x 12,5	1.0
E08	22.5	6h9	4	28	M6 x 16	1.0
E09	22.5	6h9	4	28	M6 x 16	1.2
E10	28	8h9	5	40	M10 x 22	1.2
P07	18	5h9	2	25	M5 x 12,5	1.0
P09	24.5	6h9	2	32	M8 x 19	1.2
H06	18	5h9	2	25	M5 x 12,5	1.0
H08	24.5	6h9	4	28	M8 x 19	1.0

Option angular gearbox with direct mounting

Angular gearbox stage for HeiMotion Servo modular system

The angular gear stage is available in two transmission ratios (i=1 and i=2). These can be combined in any order, resulting in up to 120 different combinations.

Due to the ratio i=2 in the angle, a reduction to a 1-stage planetary gear at the output can be achieved in many applications, which lowers the costs and space requirements significantly.

The angle gearbox is made of a lightweight die-cast aluminum body and stands out with its thermally optimized and compact design. In addition to its efficiency-optimized bevel gears with low noise emission, it also offers a reduced torsional backlash. The gear units are maintenance-free due to a lifetime lubrication with grease.

Option angular gearbox with direct mounting

Order code

Order designation: HMD06-019-320-30-BPR1PY17ED616

Gear type*

Economy series	→ E
Powerful economy	→ P
Heavy duty	→ H
Flange output	→ F[1)]
Vehicle optimized	→ V[1),2)]

Mounting variant Angular gear

V1(i=1)	A
V1(i=2)	B
V2(i=1)	C
V2(i=2)	D
V3(i=1)	E
V3(i=2)	F
V4(i=1)	G
V4(i=2)	H

Gear size*

60	mm →	6
60/70	mm →	7
80	mm →	8
80/90	mm →	9

Complete ratio

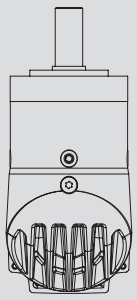
i_{ges}	Winkel i=1 (Variante A,C,E,G)	Winkel i=2 (Variante B,D,F,H)
03	x[3)]	-
04	x[3)]	-
05	x[3)]	-
06	-	x[3)]
07	x[3)]	-
08	-	x[3)]
09	x	-
10	-	x[3)]
12	x	-
14	-	x[3)]
15	x	-
16	x	x[3)]
18	-	x
20	x	x[3)]
24	-	x
25	x	-
30	-	x
32	-	x
40	-	x
50	-	x
64	-	x
80	-	x

Possible combinations

Motor size	Angle size	Planetary gear size
60	60	60
80	60	60
80	80	80
100	80	80

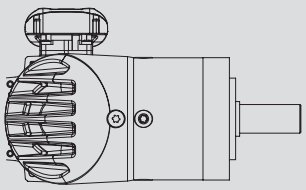
*See also catalog HMXG
1) Combinations of motor size 80 with angle 60 and motor size 100 with angle 80 not possible for technical technical reasons.
2) Mounting variants V1 not possible for mounting reasons.
3) Total gear ratio not possible for gear unit type V, as single-stage V gear units are not available.

Explanation of the order key



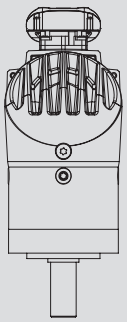
Mounting variant V1 Encryption:

A i=1 Angular toothing
B i=2 Angular toothing



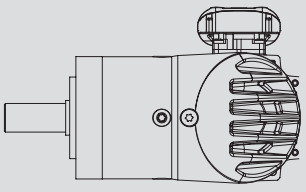
Mounting variant V2 Encryption:

C i=1 Angular toothing
D i=2 Angular toothing



Mounting variant V3 Encryption:

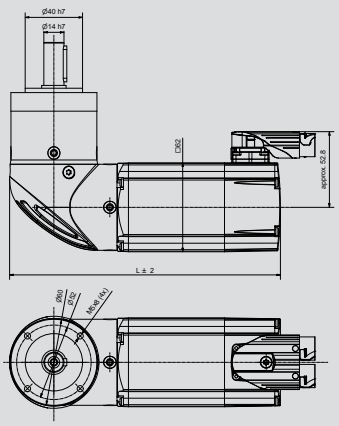
E i=1 Angular toothing
F i=2 Angular toothing



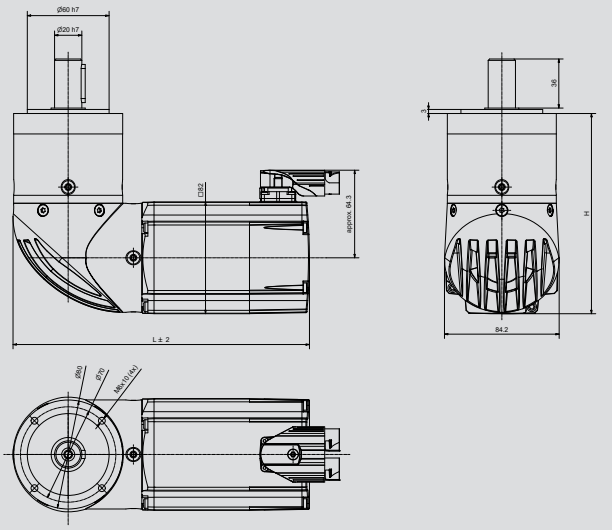
Mounting variant V4 Encryption:

G i=1 Angular toothing
H i=2 Angular toothing

Dimensions - Example of Economy series Gearbox from the HMDG modular system



Size 60



Size 80

Motor type		L_{short} [mm]		H [mm]
HMD06-011	without brake with brake	165.6 205.1	1-stage: 2-stage:	110.0 123.5
HMD06-019	without brake with brake	190.6 230.1		
HMD06-026	without brake with brake	220.6 260.1		
HMD08-024	without brake with brake	201.0 249.5	1-stage: 2-stage:	146.9 164.4
HMD08-032	without brake with brake	216.0 264.5		
HMD08-042	without brake with brake	231.0 279.5		
HMD08-057	without brake with brake	261.0 309.5		

Technical data subject to change! Last changes 11/2023

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