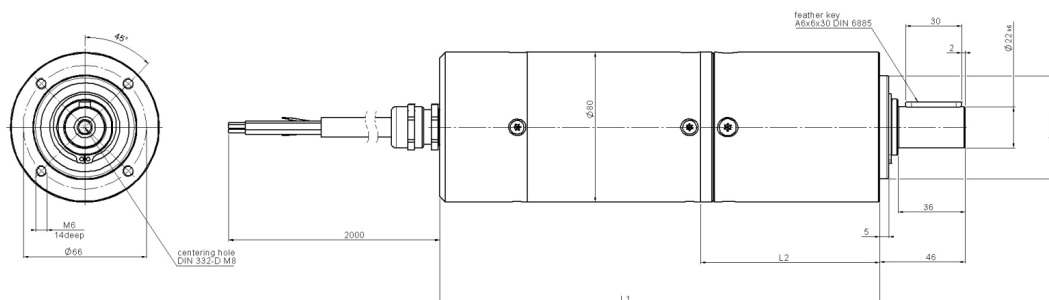


HSM71-GP800

Brushless DC motors with gear

Up to 595W output power
Hall sensor as feedback system with and without holding brake
Planetary gear GP800
max. perm. 110 Nm



Type	Gear ratio	Dimension L1	Dimension L2
HSM7115-...GP800	4 : 1 - 9 : 1 (1-stage)	200	75
HSM7115-...GP800	16 : 1 - 49 : 1 (2-stage)	222	97
HSM7130-...GP800	4 : 1 - 9 : 1 (1-stage)	215	75
HSM7130-...GP800	16 : 1 - 49 : 1 (2-stage)	237	97
HSM7145-...GP800	4 : 1 - 9 : 1 (1-stage)	230	75
HSM7145-...GP800	16 : 1 - 49 : 1 (2-stage)	252	97
HSM7160-...GP800	4 : 1 - 9 : 1 (1-stage)	245	75
HSM7160-...GP800	16 : 1 - 49 : 1 (2-stage)	267	97

Power cable

Description	Wire colour
motor phase A	black with number print 1
motor phase B	black with number print 2
motor phase C	black with number print 3

Signal cable

Description	Wire colour
Hall sensor 1	green
Hall sensor 2	yellow
Hall sensor 3	orange
Hall sensor supply	red
Hall sensor ground	black
temperature sensor PT1000 + (max. 24 V _{DC})	violet
temperature sensor PT1000 - (GND)	blue
voltage drop over PT1000 (connection to analog input)	brown

Description:

The motors of the HSM series are brushless permanent magnet DC motors. These motor systems commute on the basis of suitable drive controllers (hence the term EC motor). The stator is a 3-phase toothed coil winding, the rotor consists of 12 high-quality neodymium-iron-bore magnets. The specially developed Hall sensor board serves as a very cost-efficient and reliable feedback system. The HSM drives can be expanded modularly with different gearboxes, holding brakes and encoder systems.

Characteristics:

- high power density
- cost efficiency
- high efficiency
- low inertia rotor
- good controllability
- compact design
- all windings also available as standard in 48V_{DC}
- IP protection classes above 54 available as an option
- optional connectors available
- winding optimization also for other speeds
- connecting cable available in different lengths and with or without shield
- connecting cable assembled to the suitable EDC drive controllers

HSM 71 - GP800

1 nominal voltage	2 nominal speed	3 nominal torque ²⁾	4 peak torque	5 nominal power ²⁾	6 nominal current ¹⁾	7 peak current ¹⁾	8 power gear box input	9 nominal gear box input	10 ratio gear box	11 efficiency gear box	load limitations gear box			15 max. backlash	16 moment of inertia gear box ³⁾	17 total weight motor + gear box	18 total weight motor + gear box + parking brake	19 F _R (permissible radial shaft load) ⁴⁾	20 F _A (permissible axial shaft load)	21 motor-type
											12 max. power	13 max. cont. torque	14 max. peak torque							
V	rpm	Nm	Nm	W	A _{rms}	A _{rms}	W	rpm	i	%	W	Nm	Nm	± min	kgm ²	kg	kg	N	N	

HSM 7115-24-GP800

24	750	1,67	5,0	130,0	9,6	27,0	135	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	4,2	5,2	1000	700	HSM 7115
24	429	2,93	8,8	130,0	9,6	27,0	135	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	4,2	5,2	1000	700	
24	333	3,76	11,3	130,0	9,6	27,0	135	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	4,2	5,2	1000	700	
24	188	6,34	19,0	125,0	9,6	27,0	140	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	5,1	6,1	1000	700	
24	107	11,09	33,3	125,0	9,6	27,0	140	3000	28 :1	90	840	75,0	110	30	0,015876x10 ⁻³	5,1	6,1	1000	700	
24	61	19,40	58,2	125,0	9,6	27,0	140	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	5,1	6,1	1000	700	

HSM7115-48-GP800

48	750	1,7	4,4	130,0	4,7	130,0	135	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	4,2	5,2	1000	700	HSM 7115
48	429	2,9	7,8	130,0	4,7	130,0	135	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	4,2	5,2	1000	700	
48	333	3,8	10,0	130,0	4,7	130,0	135	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	4,2	5,2	1000	700	
48	188	6,3	16,8	125,0	4,7	130,0	140	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	5,1	6,1	1000	700	
48	107	11,1	29,5	125,0	4,7	130,0	140	3000	28 :1	90	84	75,0	110	30	0,015876x10 ⁻³	5,1	6,1	1000	700	
48	61	19,4	51,6	125,0	4,7	130,0	140	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	5,1	6,1	1000	700	

HSM 7130-24-GP800

24	750	3,3	9,9	260,0	16,3	46,0	275	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	4,65	5,65	1000	700	HSM 7130
24	429	5,8	17,3	260,0	16,3	46,0	275	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	4,65	5,65	1000	700	
24	333	7,4	22,2	260,0	16,3	46,0	275	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	4,65	5,65	1000	700	
24	188	12,5	37,4	245,0	16,3	46,0	270	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	5,55	6,55	1000	700	
24	107	21,9	65,5	245,0	16,3	46,0	270	3000	28 :1	90	840	75,0	110	30	0,015876x10 ⁻³	5,55	6,55	1000	700	
24	61	38,4	90,0 ⁵⁾	245,0	16,3	36,5 ⁵⁾	270	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	5,55	6,55	1000	700	

HSM 7130-48-GP800

48	750	3,3	9,9	260,0	8,4	24,4	275	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	4,65	5,65	1000	700	HSM 7130
48	429	5,8	17,3	260,0	8,4	24,4	275	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	4,65	5,65	1000	700	
48	333	7,4	22,2	260,0	8,4	24,4	275	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	4,65	5,65	1000	700	
48	188	12,5	37,4	245,0	8,4	24,4	270	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	5,55	6,55	1000	700	
48	107	21,9	65,5	245,0	8,4	24,4	270	3000	28 :1	90	840	75,0	110	30	0,015876x10 ⁻³	5,55	6,55	1000	700	
48	61	38,40	90,0 ⁵⁾	245,0	8,4	17,2 ⁵⁾	270	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	5,55	6,55	1000	700	

HSM 71 - GP800

1 nominal voltage	2 nominal speed	3 nominal torque ²⁾	4 peak torque	5 nominal power ²⁾	6 nominal current ¹⁾	7 peak current ¹⁾	8 power gear box input	9 nominal gear box input	10 ratio gear box	11 efficiency gear box	load limitations gear box			15 max. backlash	16 moment of inertia gear box ³⁾	17 total weight motor + gear box	18 total weight motor + gear box + parking brake	19 F _R (permissible radial shaft load) ⁴⁾	20 F _A (permissible axial shaft load)	21 motor-type
V	rpm	Nm	Nm	W	A _{rms}	A _{max}	W	rpm	i	%	W	Nm	Nm	° min	kgm ²	kg	kg	N	N	

HSM 7145-24-GP800

24	750	5,5	16,5	435,0	25,3	69,0	460	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	5,1	6,1	1000	700	HSM 7145
24	429	9,6	28,9	435,0	25,3	69,0	460	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	5,1	6,1	1000	700	
24	333	12,4	37,2	435,0	25,3	69,0	460	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	5,1	6,1	1000	700	
24	188	20,9	62,6	410,0	25,3	69,0	455	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	6,0	7,0	1000	700	
24	107	36,5	109,6	410,0	25,3	69,0	455	3000	28 :1	90	840	75,0	110	30	0,015876x10 ⁻³	6,0	7,0	1000	700	
24	61	60,0	90,0 ⁵⁾	385,0	22,8 ⁵⁾	33,3 ⁵⁾	430	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	6,0	7,0	1000	700	

HSM7145-48-GP800

48	750	5,5	16,5	435,0	14,5	41,0	460	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	5,1	6,1	1000	700	HSM 7145
48	429	9,6	28,9	435,0	14,5	41,0	460	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	5,1	6,1	1000	700	
48	333	12,4	37,2	435,0	14,5	41,0	460	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	5,1	6,1	1000	700	
48	188	20,9	62,6	410,0	14,5	41,0	455	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	6,0	7,0	1000	700	
48	107	36,5	109,6	410,0	14,5	41,0	455	3000	28 :1	90	84	75,0	110	30	0,015876x10 ⁻³	6,0	7,0	1000	700	
48	61	60,0	90,0 ⁵⁾	385,0	13,6 ⁵⁾	19,9 ⁵⁾	430	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	6,0	7,0	1000	700	

HSM 7160-48-GP800

48	750	7,6	22,8	595,0	18,3	52,0	625	3000	4 :1	95	3140	40,0	60	25	0,021848x10 ⁻³	5,55	6,55	1000	700	HSM 7160
48	429	13,3	39,9	595,0	18,3	52,0	625	3000	7 :1	95	1795	40,0	60	25	0,016840x10 ⁻³	5,55	6,55	1000	700	
48	333	17,1	45,0	595,0	18,3	46,2 ⁵⁾	625	3000	9 :1	95	1045	30,0	45	25	0,015945x10 ⁻³	5,55	6,55	1000	700	
48	188	28,8	84,4	565,0	18,3	52,0	630	3000	16 :1	90	1475	75,0	110	30	0,019380x10 ⁻³	6,45	7,45	1000	700	
48	107	50,4	110,0	565,0	18,3	38,5 ⁵⁾	630	3000	28 :1	90	840	75,0	110	30	0,015876x10 ⁻³	6,45	7,45	1000	700	
48	61	60,0	90,0 ⁵⁾	385,0	12,8 ⁵⁾	18,7 ⁵⁾	430	3000	49 :1	90	385	60,0	90	30	0,015800x10 ⁻³	6,45	7,45	1000	700	

Tolerances

± 10%

Columns 3 and 11

Values are valid at operating temperature after run-in-period.

Columns 3 and 6

In order to avoid overloading the gear unit, the motor torque must be limited by setting the motor current on the external controller.

Columns 4 and 7

The drive may only be loaded with the peak current for a short time, otherwise the motor system or the gear unit may be destroyed.

Columns 12, 13 and 14

Do not exceed the stated values in order to avoid gearbox overload. For oscillation operation the limits stated must be multiplied by 0,75.

1) RMS values of the phase current, to be read externally or in edc tools.

2) Values apply to motor mounting on aluminium contact surfaces of at least 0,15 m with a minimum thickness of 10 mm or equivalent metal surface.

3) Values are reduced to motor shaft.

4) Centre of the shaft.

5) Motor current must be limited to the reduced value by setting on the integrated controller.