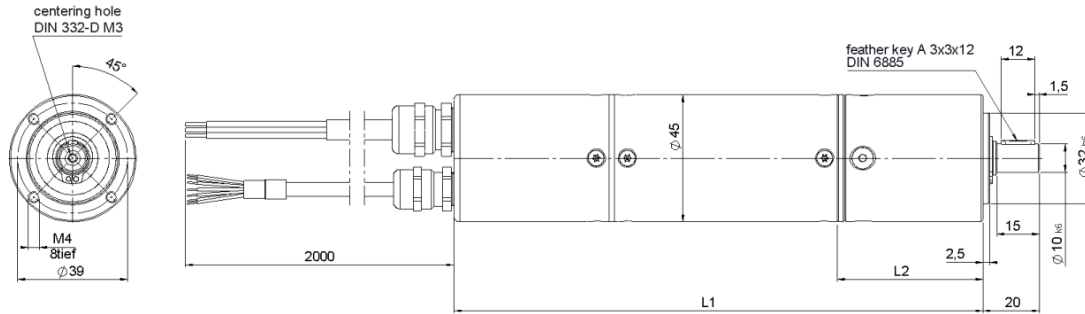


HSM38-GP45

Brushless DC motors with gear

Up to 42W output power
Hall sensor as feedback system with and without holding brake

Planetary gear GP45
max. perm. 20Nm



Type	Gear ratio	Dimension L1	Dimension L2
HSM3815-24-GP45	4 : 1 - 7 : 1 (1-stage)	174	53
HSM3815-24-GP45	9 : 1 - 49 : 1 (2-stage)	189	68
HSM3830-24-GP45	4 : 1 - 7 : 1 (1-stage)	189	53
HSM3830-24-GP45	9 : 1 - 49 : 1 (2-stage)	204	68
HSM3845-24-GP45	4 : 1 - 7 : 1 (1-stage)	204	53
HSM3845-24-GP45	9 : 1 - 49 : 1 (2-stage)	219	68

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 commutate 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
- 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 38 - GP45

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 F _R (permissible radial shaft load) ⁴⁾	19 F _A (permissible axial shaft load)	20 motor - type
											12 max. power	13 max. cont. torque	14 max. peak torque						
V	rpm	Nm	Nm	W	A _{ms}	A _{ms}	W	rpm	i	%	W	Nm	Nm	° min	kgm ²	kg	N	N	

HSM3815-24-GP45

24	750	0,11	0,19	9,5	0,7	2,1	10	3000	4 : 1	95	550	7	15	20	0,00291x10 ⁻³	1,29	500	200	HSM 3815
24	429	0,19	0,33	9,5	0,7	2,1	10	3000	7 : 1	95	315	7	15	20	0,00270x10 ⁻³	1,29	500	200	
24	333	0,23	0,43	9	0,7	2,1	10	3000	9 : 1	90	350	10	20	25	0,00310x10 ⁻³	1,44	500	200	
24	188	0,42	0,76	9	0,7	2,1	10	3000	16 : 1	90	275	14	20	25	0,00287x10 ⁻³	1,44	500	200	
24	107	0,73	1,34	9	0,7	2,1	10	3000	28 : 1	90	155	14	20	25	0,00268x10 ⁻³	1,44	500	200	
24	61	1,28	2,34	9	0,7	2,1	10	3000	49 : 1	90	65	10	20	25	0,00268x10 ⁻³	1,44	500	200	

HSM3830-24-GP45

24	750	0,27	0,66	22	1,6	4,8	23	3000	4 : 1	95	550	7	15	20	0,00291x10 ⁻³	1,41	500	200	HSM 3830
24	429	0,47	1,16	22	1,6	4,8	23	3000	7 : 1	95	315	7	15	20	0,00270x10 ⁻³	1,41	500	200	
24	333	0,57	1,49	21	1,6	4,8	23	3000	9 : 1	90	350	10	20	25	0,00310x10 ⁻³	1,56	500	200	
24	188	1,01	2,64	21	1,6	4,8	23	3000	16 : 1	90	275	14	20	25	0,00287x10 ⁻³	1,56	500	200	
24	107	1,76	4,62	21	1,6	4,8	23	3000	28 : 1	90	155	14	20	25	0,00268x10 ⁻³	1,56	500	200	
24	61	3,09	8,09	21	1,6	4,8	23	3000	49 : 1	90	65	10	20	25	0,00268x10 ⁻³	1,56	500	200	

HSM3845-24-GP45

24	750	0,53	0,92	42	2,8	8,4	44	3000	4 : 1	95	550	7	15	20	0,00291x10 ⁻³	1,53	500	200	HSM 3845
24	429	0,93	1,62	42	2,8	8,4	44	3000	7 : 1	95	315	7	15	20	0,00270x10 ⁻³	1,53	500	200	
24	333	1,13	2,08	40	2,8	8,4	44	3000	9 : 1	90	350	10	20	25	0,00310x10 ⁻³	1,68	500	200	
24	188	2,02	3,7	40	2,8	8,4	44	3000	16 : 1	90	275	14	20	25	0,00287x10 ⁻³	1,68	500	200	
24	107	3,53	6,47	40	2,8	8,4	44	3000	28 : 1	90	155	14	20	25	0,00268x10 ⁻³	1,68	500	200	
24	61	6,2	11,3	40	2,8	8,4	44	3000	49 : 1	90	65	10	20	25	0,00268x10 ⁻³	1,68	500	200	

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 m² with a minimum thickness of 10 mm or equivalent metal surface.

3) Values are reduced to motor shaft.

4) Centre of the shaft.