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Find the *SEM HDM105G10-90S* at our website: *Click HERE*

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SEM BRUSHLESS AC SERVOMOTORS

The low inertia HDM series of compact servomotors offer premium performance in all applications where space constraints apply.

HDM Series – Low inertia servomotors ideal for applications requiring high dynamic performance.

FRAME SIZE		HDM VOLTAGE GRADIENT AVAILABILITY									
HDM 82	A	9	15	24	30	47	60				
	C	11	14	22	28	44	63	98			
	E		17	19	30	38	64	76	120		
	J				33	40	56	80	116		
HDM 105	A			18	31	44	72	89	140		
	C			27	39	54	77	90	135	156	
	E				40	51	64	81	104	135	
	G					55	69	90	120		
HDM 142	A				34	54	75	107	150		
	C						76	107	152		
	E							92	147	204	
	J								137	214	309

Other voltage gradients may be available. Please contact SEM for further information.

OPTIONS

STANDARD / OPTIONAL FEATURES

DESCRIPTION	OPTIONS	SERVOMOTOR TYPE HDM82	HDM105	HDM142
WAVEFORM	SINUSOIDAL	■	■	■
MECHANICAL	FLANGE MOUNTED	■	■	■
	ENCLOSED KEYWAY	■	■	■
	PLAIN SHAFT	●	●	●
	IP65 (IP64 AT SHAFT WITH SHAFT SEAL FITTED)	●	■	■
	IP65 (IP50 AT SHAFT WITH SHAFT SEAL SUPPLIED LOOSE)	■	●	●
	ALTERNATIVE SHAFT AND FLANGE OPTIONS	●	●	●
ELECTRICAL CONNECTION	RADIAL INTERCONNECTRON CONNECTORS (SIDE FACING)	●	●	●
	AXIAL INTERCONNECTRON CONNECTORS (FORWARD FACING)	○	■	■
	AXIAL INTERCONNECTRON CONNECTORS (REAR FACING)	○	●	●
	AXIAL M17 CONNECTORS (FORWARD FACING)	●	●	○
	AXIAL M17 CONNECTORS (REAR FACING)	■	●	○
	FLYING LEADS	●	●	○
	FLYING LEADS WITH INTERCONNECTRON CONNECTORS	○	○	○
	COUNTERPART CONNECTORS	●	●	●
HOLDING BRAKE, 24V D.C. FAILSAFE	SPRING APPLIED	●	●	●
	PERMANENT MAGNET (ZERO BACKLASH)	●	●	●
FEEDBACK DEVICE	2 POLE RESOLVER	■	■	■
	INCREMENTAL ENCODER WITH BLOCK COMMUTATION	▲	▲	▲
	HEIDENHAIN ABSOLUTE ENCODER WITH ENDAT INTERFACE	▲	▲	▲
	OTHER SINGLE OR MULTITURN ABSOLUTE ENCODER	▲	▲	▲

■ STANDARD FEATURE ▲ OPTION WITH INCREASED MOTOR LENGTH
● OPTION ○ OPTION NOT AVAILABLE

FOR OPTIONS NOT INCLUDED IN THE ABOVE LIST, PLEASE CONTACT SEM



HDM105C10 with axial interconnectron connectors (forward facing)



HDM82C with M17 connectors (rear facing)



HDM82C with radial interconnectron connectors (side facing)

SEM
controlled motor technology

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SEM/HDM/10/14

HDM SERIES

ISSUE 6



Low Inertia Compact AC Servomotors

SEM
controlled motor technology

MOTOR TYPE DEFINITION (for HDM types)

For example:

HDM105C10-77S

HDM Low inertia compact brushless servomotor.

105 105mm square frame

C Motor length with A as shortest.

10 Number of motor poles.

-77 Voltage gradient (peak voltage per 1000 rpm between two phases).

S Sinusoidal waveform.

PERFORMANCE DATA

- Inertia values include fitted resolver.
- TENV (IC400) = Totally Enclosed Non Ventilated.
- Tolerance : ±10%

  Except for voltage gradient (V/1000rpm) and torque constant (Nm/A) values which are to +15%/-5% tolerance.
- All continuous ratings apply to motors with a temperature rise of Δ100K on the windings when fitted on an aluminium plate as follows:

FRAME	PLATE SIZE (mm)
HDM82	255 x 255 x 6
HDM105	305 x 305 x 13
HDM142	457 x 457 x 13

- Performance curves showing continuous/ intermittent duties are available for selected drive rail voltages.

STANDARD FEATURES

- Sinusoidal three phase back EMF waveform.
- Neodymium Iron Boron magnets.
- Integral Resolver feedback.
- Industry standard shaft and flange sizes.
- IP65 enclosure protection. IP64 at shaft with seal fitted.
- Shaft with enclosed keyway.
- Temperature sensor mounted in motor winding.
- Class F insulation.
- Matt black paint finish.
- Motor and feedback connector. Counterpart plugs optional.

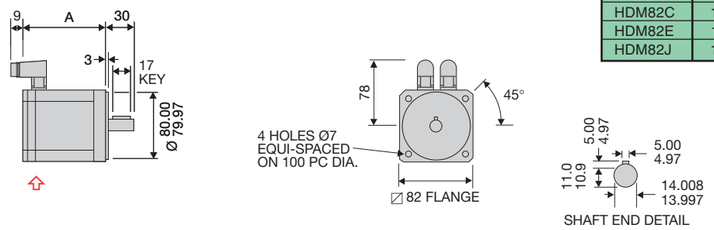
In accordance with our policy of continual product improvement, SEM reserves the right to amend the specification of these products without prior notification

Dimensions shown on the drawings are in millimetres.

The **HDM** series of compact servomotors offer premium performance with low inertia.

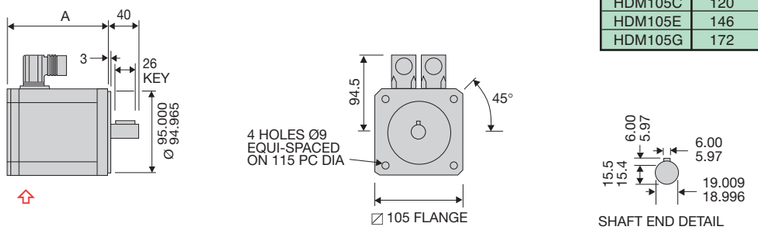
HDM82

Frame	Dimension 'A'	
	Without brake	With brake
HDM82A	82	122
HDM82C	100	140
HDM82E	118	158
HDM82J	154	194



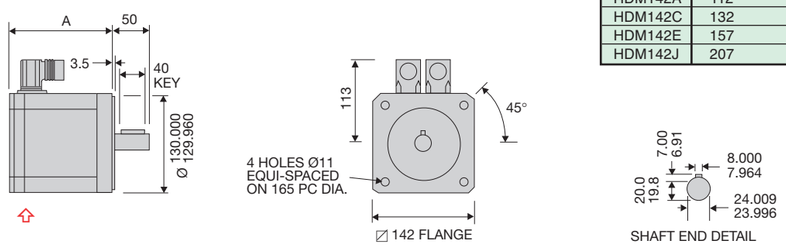
HDM105

Frame	Dimension 'A'	
	Without brake	With brake
HDM105A	94	139
HDM105C	120	165
HDM105E	146	191
HDM105G	172	217



HDM142

Frame	Dimension 'A'	
	Without brake	With brake
HDM142A	112	172
HDM142C	132	192
HDM142E	157	217
HDM142J	207	267



⇧ = Fixed Bearing

Motor type – voltage gradient V/1000rpm (+15% - 5%)	Nett weight (no brake fitted)	Cont. stall torque	Cont. stall current (rms)	Torque constant Kt	Peak stall torque	Max. peak current	Max. speed (300V DC bus)	Max. speed (560V DC bus)	Rotor inertia (no brake fitted)	Max. Cogging torque	Resist-ance	Induct-ance[d]	Max. motor EMF[b]	Nominal Torque	Nominal Speed	Nominal Power	Cont. stall torque HR/HJ[c]
	kg	Nm	A	Nm/A	Nm	A	rpm	rpm	kgcm²	Nm	Ω	mH	V	Nm	rpm	Kw	Nm
HDM82A8-15S	1.7	**0.84**	**4.8**	0.17	2.2	**22**	8000	- [a]	**0.35**	0.028	1.13	2.0	120	0.8	4500	0.38	0.74
HDM82A8-30S	1.7	**0.84**	**2.4**	0.35	2.2	**11.2**	8000	- [a]	**0.35**	0.028	4.5	8.0	240	0.8	4500	0.38	0.74
HDM82A8-47S	1.7	**0.84**	**1.5**	0.54	2.2	**7.1**	6400	8000	**0.35**	0.028	11.2	20.0	380	0.8	4500	0.38	0.74
HDM82C8-22S	2.3	**1.7**	**6.6**	0.26	4.6	**32**	8000	- [a]	**0.61**	0.05	0.83	1.8	180	1.6	4500	0.75	1.55
● **HDM82C8-28S**	2.3	**1.7**	**5.2**	0.33	4.6	**25**	8000	- [a]	**0.61**	0.05	1.37	3.0	220	1.6	4500	0.75	1.55
● **HDM82C8-63S**	2.3	**1.7**	**2.3**	0.75	4.6	**11**	4800	8000	**0.61**	0.05	7	15.0	500	1.6	4500	0.75	1.55
HDM82E8-30S	2.9	**2.3**	**6.6**	0.35	6.9	**35**	8000	- [a]	**0.88**	0.075	0.91	2.2	240	2.1	4500	0.99	2.2
● **HDM82E8-38S**	2.9	**2.3**	**5.2**	0.45	6.9	**28**	7800	- [a]	**0.88**	0.075	1.5	3.4	300	2.1	4500	0.99	2.2
● **HDM82E8-76S**	2.9	**2.3**	**2.6**	0.9	6.9	**14**	3900	7300	**0.88**	0.075	5.8	13.5	610	2.1	4500	0.99	2.2
HDM82J8-40S	4	**3.5**	**7.5**	0.48	11.6	**44**	7300	- [a]	**1.4**	0.11	0.89	2.2	320	2.6	4500	1.23	3.2
HDM82J8-56S	4	**3.5**	**5.3**	0.66	11.6	**32**	5300	8000	**1.4**	0.11	1.7	4.2	450	2.6	4500	1.23	3.2
HDM82J8-116S	4	**3.5**	**2.6**	1.35	11.6	**15**	2600	4800	**1.4**	0.11	7.1	18.5	700	2.6	4500	1.23	3.2
HDM105A10-31S	3	**2.4**	**6.6**	0.36	5.3	**26**	6000	- [a]	**1.4**	0.12	1.07	2.3	190	2.2	3000	0.69	2.2
HDM105A10-44S	3	**2.4**	**4.7**	0.51	5.3	**18**	6000	- [a]	**1.4**	0.12	2.1	4.6	260	2.2	3000	0.69	2.2
HDM105A10-89S	3	**2.4**	**2.3**	1.05	5.3	**9**	3300	6000	**1.4**	0.12	8.6	19	530	2.2	3000	0.69	2.2
HDM105C10-39S	4.3	**4.6**	**10.1**	0.45	11	**43**	6000	- [a]	**2.3**	0.16	0.6	1.6	230	4	3000	1.26	4.3
● **HDM105C10-54S**	4.3	**4.6**	**7.3**	0.63	11	**31**	5500	- [a]	**2.3**	0.16	1.14	3.0	320	4	3000	1.26	4.3
● **HDM105C10-77S**	4.3	**4.6**	**5.1**	0.9	11	**22**	3800	6000	**2.3**	0.16	2.3	6.1	460	4	3000	1.26	4.3
● **HDM105E10-51S**	5.5	**6.3**	**10.6**	0.6	17	**49**	5800	- [a]	**3.2**	0.21	0.64	1.8	310	5.2	3000	1.63	5.9
● **HDM105E10-81S**	5.5	**6.3**	**6.7**	0.96	17	**31**	3700	6000	**3.2**	0.21	1.6	4.4	490	5.2	3000	1.63	5.9
HDM105E10-104S	5.5	**6.3**	**5.2**	1.23	17	**24**	2800	5300	**3.2**	0.21	2.6	7.0	620	5.2	3000	1.63	5.9
HDM105G10-69S	6.7	**7.9**	**9.8**	0.81	22	**49**	4300	- [a]	**4.1**	0.26	0.82	2.3	410	5.7	3000	1.79	7.5
HDM105G10-90S	6.7	**7.9**	**7.5**	1.05	22	**37**	3300	6000	**4.1**	0.26	1.34	3.9	540	5.7	3000	1.79	7.5
HDM105G10-120S	6.7	**7.9**	**5.6**	1.41	22	**28**	2500	4600	**4.1**	0.26	2.5	7.0	700	5.7	3000	1.79	7.5
HDM142A10-54S	6.2	**9.1**	**14**	0.63	20	**56**	5000	- [a]	**6.6**	0.2	0.55	2.7	270	8	3000	2.51	8.1
HDM142A10-75S	6.2	**9.1**	**10.4**	0.87	20	**41**	4000	5000	**6.6**	0.2	1.06	5.1	380	8	3000	2.51	8.1
HDM142A10-107S	6.2	**9.1**	**7.3**	1.26	20	**28**	2800	5000	**6.6**	0.2	2.1	10.5	540	8	3000	2.51	8.1
HDM142C10-76S	8.3	**13**	**15**	0.9	34	**68**	3900	5000	**10.7**	0.38	0.52	2.9	380	11	3000	3.46	12.3
● **HDM142C10-107S**	8.3	**13**	**10.4**	1.26	34	**48**	2800	5000	**10.7**	0.38	1.03	5.8	540	11	3000	3.46	12.3
HDM142C10-152S	8.3	**13**	**7.3**	1.8	34	**34**	2000	3700	**10.7**	0.38	2	12.0	700	11	3000	3.46	12.3
HDM142E10-92S	10.8	**17**	**16**	1.08	51	**84**	3300	5000	**16**	0.6	0.45	2.8	460	14	3000	4.40	16
● **HDM142E10-147S**	10.8	**17**	**9.9**	1.7	51	**52**	2000	3800	**16**	0.6	1.17	7.0	700	14	3000	4.40	16
HDM142E10-204S	10.8	**17**	**7.1**	2.4	51	**38**	1500	2700	**16**	0.6	2.2	14.0	700	14	3000	4.40	16
HDM142J10-137S	15.9	**25**	**16**	1.6	85	**94**	2200	4100	**26**	1	0.56	3.6	690	17	3000	5.34	24
HDM142J10-214S	15.9	**25**	**10**	2.5	85	**60**	1400	2600	**26**	1	1.36	9.0	700	20.2	2000	4.23	24
HDM142J10-309S	15.9	**25**	**6.9**	3.6	85	**42**	1000	1800	**26**	1	2.8	18.5	700	23	1000	2.41	24

● Standard motor type ▌ Preferred motor type

a) Where no speed is specified, optimal performance may not be achieved on 560V DC link
b) Max motor EMF is the peak voltage generated by the motor between 2 phases at the maximum allowable mechanical speed or 700V (whichever is the greater)
c) For comparison purposes with SEM HR and HJ servomotors only
d) Inductance values are based on nominal current

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