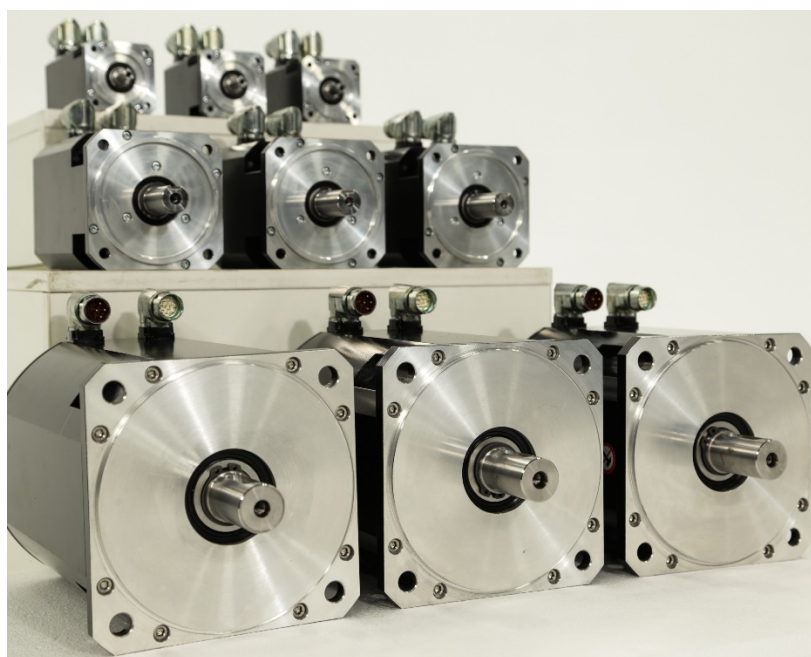




Permanent Magnet Synchronous Servomotors IBM Series



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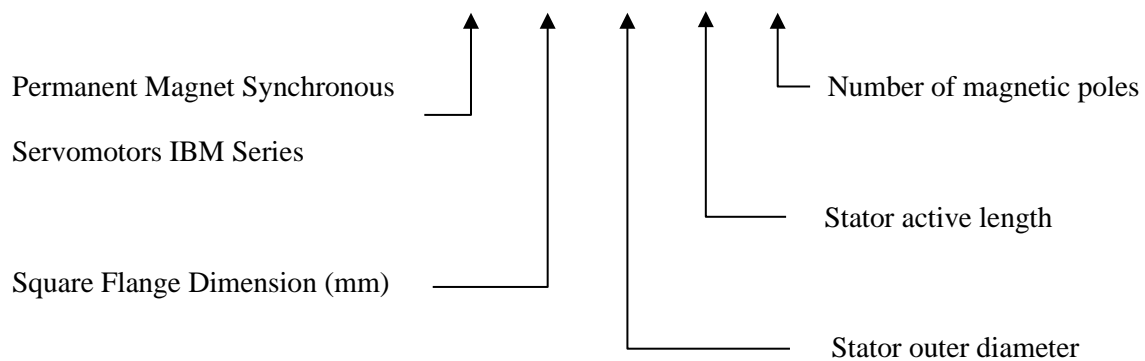


IBM Series Quick Selection Guide

<i>Model Number</i>	<i>Continuous Stall Torque Nm</i>	<i>Rated Torque Nm</i>	<i>Flange mm</i>	<i>Total Length mm</i>
IBM-071-062-023-010	1	0.9	71	100
IBM-071-062-046-010	2	1.8		123
IBM-071-062-069-010	2.7	2.2		146
IBM-121-111-030-010	5.4	4.2	121	130
IBM-121-111-060-010	10	6.2		160
IBM-121-111-090-010	14	7		190
IBM-145-140-035-010	9	8	145	175
IBM-145-140-060-010	15	13		200
IBM-145-140-120-010	27	20		260
IBM-145-140-180-010	39	28		320
IBM-190-170-060-010	25	22	190	200
IBM-190-170-090-010	34	28		230
IBM-190-170-120-010	43	32		260

IBM Series Quick Model Number

IBM-071-062-023-010





Product Description

The permanent magnet synchronous servomotors of IBM series are high performance brushless motor excited by rare earth permanent magnets located on the rotor. These motors are developed to answer to high performance application being ideal for any type of automation equipment.

The IBM series of electric servomotors are characterized by high torque density, reduced overall dimensions and high dynamic performances. These AC brushless sinusoidal servomotors were designed as standard for a bus voltage 325 Vdc. The winding can be customized for different bus voltage values.

The servomotors are available in four frames covering a stall torque range between 1 to 43 Nm with natural cooling. They are intended for use in normal industrial environment without exposure to excessive or corrosive moisture or abnormal ambient temperatures.

Technical data

- High energy Nd-Fe-B magnets
- 10 (ten) magnetic poles
- Insulation Class F
- Standard Feedback System: Resolver
- Winding protection with PTC
- Protection class: IP55

Options

- Shaft with Keyway according to DIN 6885
- Holding Brake 24V DC (reenergizing operation)
- Shaft Seal Ring
- Additional Feedback Systems (Encoder)
- Protection Class IP 65
- Custom windings

Features

- Torque ranges from 0.9 to 32 Nm
- Maintenance free
- Designed to be compact, high performance and cost effective
- Low torque ripple
- High torque to weight ratios
- Superior low speed performances
- Low inertia

Applications

- Machine tools
- Laser scanning and printing
- Motion simulators
- Rotary stages
- Robots
- Tracking systems
- Medical devices
- Automations



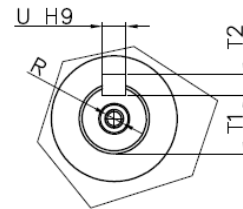
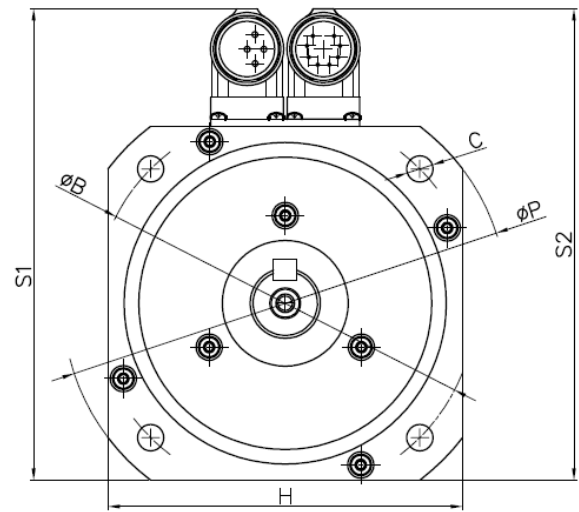
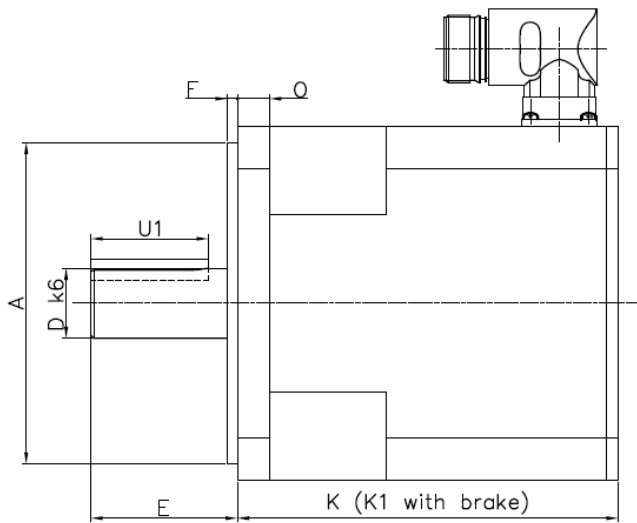
Servomotor IBM-071-062 Specifications

Pos.	Description	Unit	IBM-071-062-023	IBM-071-062-046	IBM-071-062-069
1	Rated Power ¹⁾	kW	0.28	0.57	0.69
2	Rated Torque ¹⁾	Nm	0.9	1.8	2.2
3	Continuous Stall Torque ¹⁾	Nm	1	2	2.7
4	Peak Torque	Nm	3.5	6.2	10.8
5	Rated current ¹⁾	A _{rms}	2.3	3.2	4.4
6	Rated voltage	V _{DC}	325	325	325
7	Continuous Stall current ¹⁾	A _{rms}	3	4	6
8	Peak current	A _{rms}	10	13	22
9	Rated speed	rot/min	3000	3000	3000
10	Maximum speed	rot/min	7400	5600	6000
11	Resistance ²⁾	Ω	5	3.6	2.1
12	Inductance ²⁾	mH	9.2	7.5	4.5
13	Torque constant ¹⁾	Nm/A _{rms}	0.40	0.56	0.50
14	BEMF constant ²⁾	V _{rms} /krpm	26.9	35.1	33.2
15	Number of magnetic poles		10	10	10
16	Thermal resistance	C°/W	1.94	1.17	1.05
17	Static friction torque	Nm	0.018	0.036	0.044
18	Resolver model	-	15 RX	15 RX	15 RX
19	Number of poles of the resolver		2	2	2
20	Moment of inertia	kgcm ²	0.4	0.7	1
21	Weight	kg	1.4	1.8	2.1
22	Degree of protection	IP	55	55	55
23	Ambient temperature	C° min...max	-15 +40	-15 +40	-15 +40
24	Winding - protection	-	PTC	PTC	PTC
25	Cooling method	-	natural	natural	natural
26	Insulation class	-	F	F	F
27	Vibration severity	-	G2.5	G2.5	G2.5
28	Shaft rotational accuracy	mm	0.035	0.035	0.035
29	Shaft height tolerance	mm	0.012	0.012	0.012

¹⁾ Motor mounted on a metallic flange with dimensions 250x250x6.5 mm³
Ambient temperature 40 °C

²⁾ Measured at 25 °C

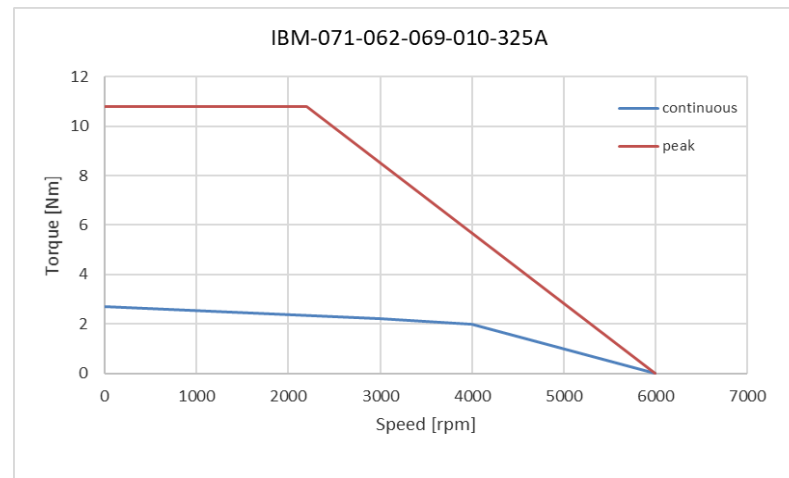
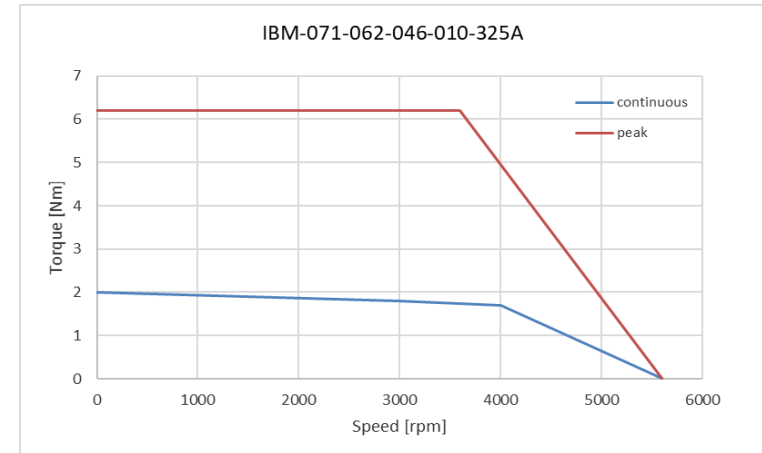
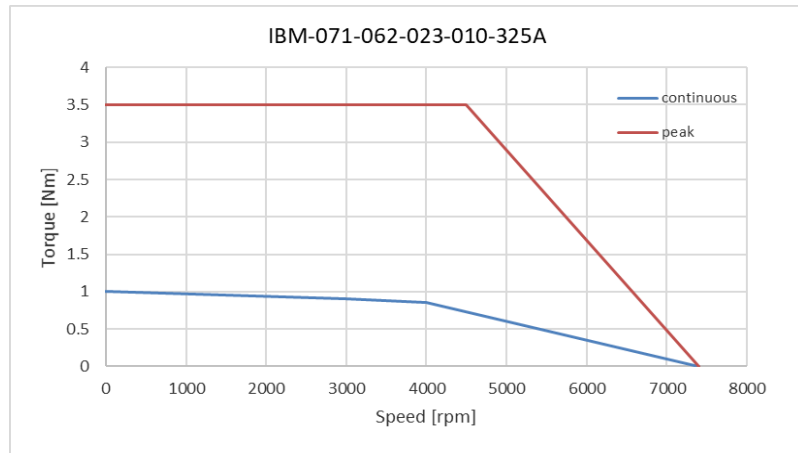
Servomotor IBM-071-062 Dimensions



Type	Size	A (j6)	B	C	D (k6)	E	F	H	K	K1	M	O	P	R	T1	T2 (h9)	U (h9)	U1
IBM-071-062-023	71	60	75	5,5	11	23	2,5	71	100		94	8,5	94	M4x10	12,5	3	4	16
IBM-071-062-046	71	60	75	5,5	11	23	2,5	71	123		94	8,5	94	M4x10	12,5	3	4	16
IBM-071-062-069	71	60	75	5,5	11	23	2,5	71	146		71	8,5	94	M4x10	12,5	3	4	16



Servomotor IBM-071-062 Performances





Servomotor IBM-121-111 Specifications

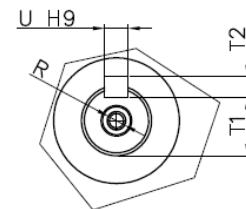
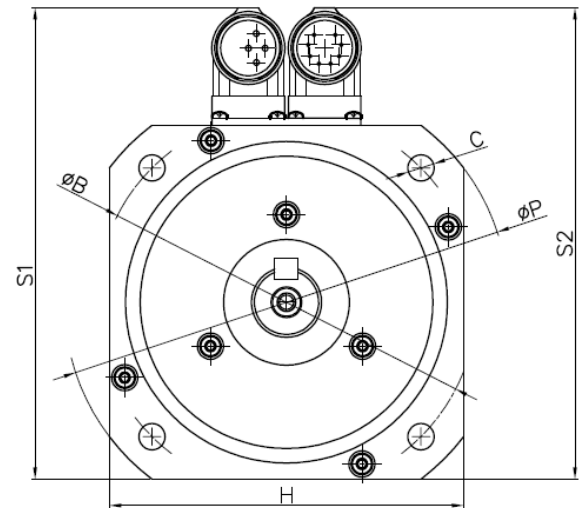
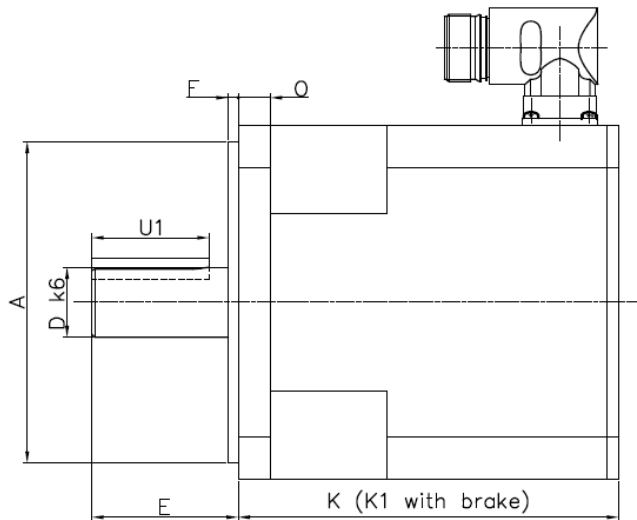
Pos.	Description	Unit	IBM-121-111-030	IBM-121-111-060	IBM-121-111-090
1	Rated Power ¹⁾	kW	1.32	1.95	2.20
2	Rated Torque ¹⁾	Nm	4.2	6.2	7
3	Continuous Stall Torque ¹⁾	Nm	5.4	10	14
4	Peak Torque	Nm	27	40	58
5	Rated current ¹⁾	A _{rms}	5.5	8.9	6.5
6	Rated voltage	V _{DC}	325	325	325
7	Continuous Stall current ¹⁾	A _{rms}	7	14	13
8	Peak current	A _{rms}	39	59	56
9	Rated speed	rot/min	3000	3000	3000
10	Maximum speed	rot/min	5000	5400	3600
11	Resistance ²⁾	Ω	1.4	0.5	0.6
12	Inductance ²⁾	mH	4.5	1.8	2.7
13	Torque constant ¹⁾	Nm/A _{rms}	0.76	0.70	1.08
14	BEMF constant ²⁾	V _{rms} /krpm	50.2	46.7	69.3
15	Number of magnetic poles		10	10	10
16	Thermal resistance	C°/W	0.81	0.62	0.50
17	Static friction torque	Nm	0.084	0.124	0.14
18	Resolver model	-	15 RX	15 RX	15 RX
19	Number of poles of the resolver		2	2	2
20	Moment of inertia	kgcm ²	9.8	9.8	14.7
21	Weight	kg	5.9	7.4	8.9
22	Degree of protection	-	55	55	55
23	Ambient temperature	C° min...max	-15 +40	-15 +40	-15 +40
24	Winding - protection	-	PTC	PTC	PTC
25	Cooling method	-	natural	natural	natural
26	Insulation class	-	F	F	F
27	Vibration severity	-	G2.5	G2.5	G2.5
28	Shaft rotational accuracy	mm	0.035	0.035	0.035
29	Shaft height tolerance	mm	0.012	0.012	0.012

¹⁾ Motor mounted on a metallic flange with dimensions 300x300x30 mm³
Ambient temperature 40 °C

²⁾ Measured at 25 °C



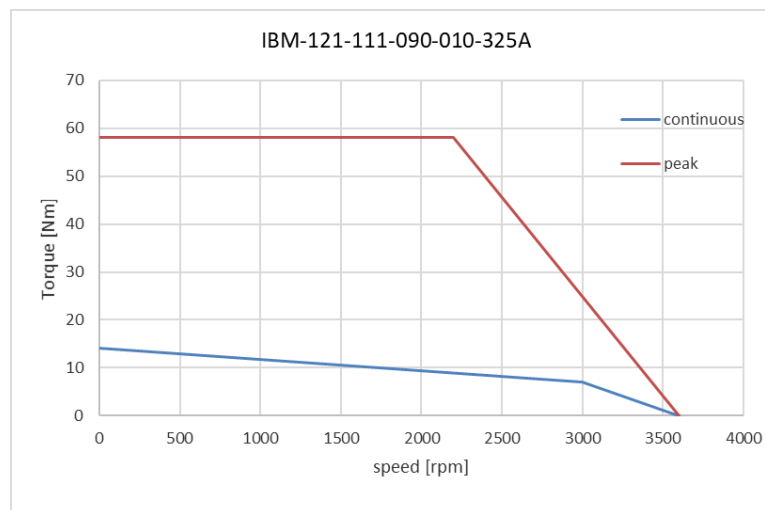
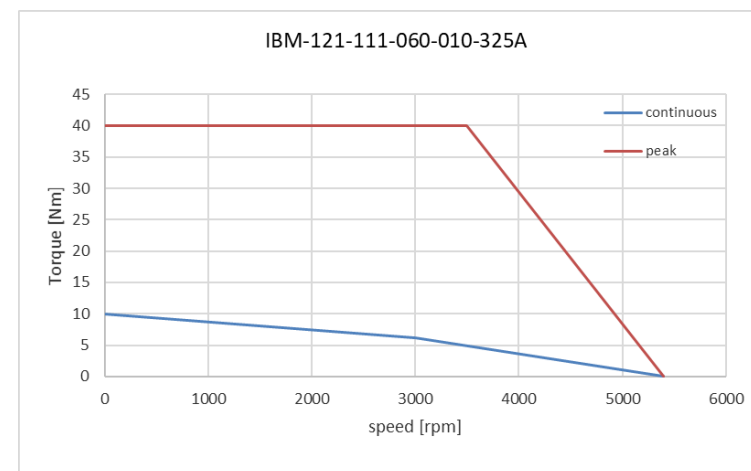
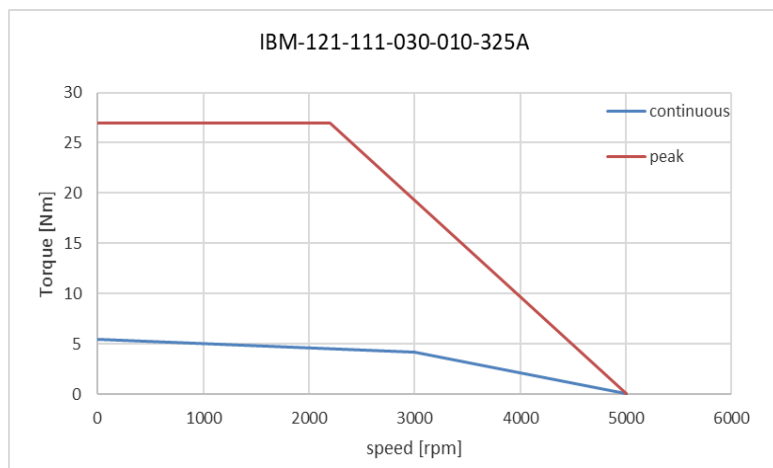
Servomotor IBM-121-111 Dimensions



Type	Size	A (j6)	B	C	D (k6)	E	F	H	K	K1	M	O	P	R	T1	T2 (h9)	U (h9)	U1
IBM-121-111-030	121	110	130	9	24	50	3,5	121	130		121	11	152	M8-20	27	3	8	40
IBM-121-111-060	121	110	130	9	24	50	3,5	121	160		121	11	152	M8-20	27	3	8	40
IBM-121-111-090	121	110	130	9	24	50	3,5	121	190		121	11	152	M8-20	27	3	8	40



Servomotor IBM-121-111 Performances





Servomotor IBM-145-140 Specifications

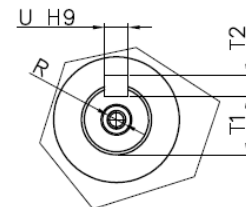
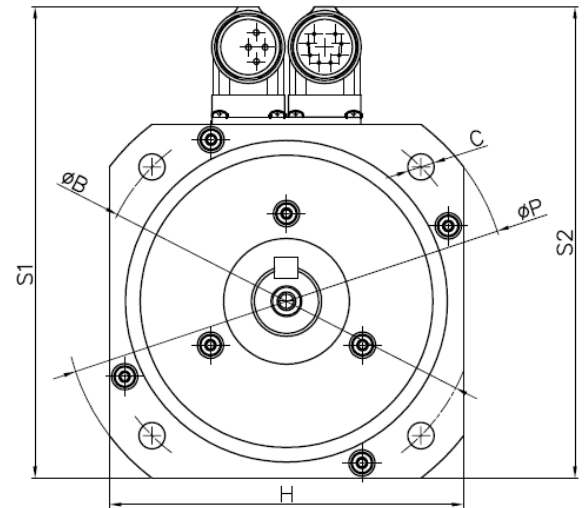
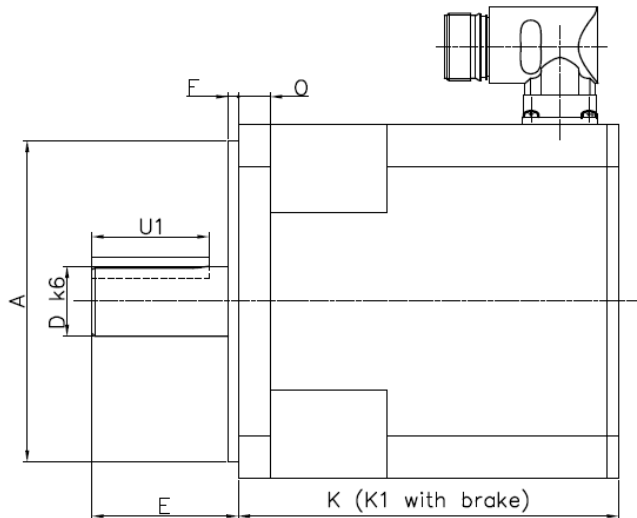
Pos.	Description	Unit	IBM-145-140-035	IBM-145-140-060	IBM-145-140-120	IBM-145-140-180
1	Rated Power ¹⁾	kW	2.51	4.08	6.28	8.80
2	Rated Torque ¹⁾	Nm	8	13	20	28
3	Continuous Stall Torque ¹⁾	Nm	9	15	27	39
4	Peak Torque	Nm	35	50	90	137
5	Rated current ¹⁾	A _{rms}	6.2	9.0	13.8	18.2
6	Rated voltage	V _{DC}	565	565	565	565
7	Continuous Stall current ¹⁾	A _{rms}	7	10	19	25
8	Peak current	A _{rms}	31	42	69	98
9	Rated speed	rot/min	3000	3000	3000	3000
10	Maximum speed	rot/min	5400	4700	4700	4400
11	Resistance ²⁾	Ω	2	1.1	1.1	0.3
12	Inductance ²⁾	mH	8.4	6.2	6.2	2.2
13	Torque constant ¹⁾	Nm/A _{rms}	1.29	1.44	1.44	1.54
14	BEMF constant ²⁾	V _{rms} /krpm	79.2	92.6	92.6	98.3
15	Number of magnetic poles		10	10	10	10
16	Thermal resistance	C°/W	0.66	0.53	0.53	0.28
17	Static friction torque	Nm	0.16	0.26	0.4	0.56
18	Resolver model	-	21 RX	21 RX	21 RX	21 RX
19	Number of poles of the resolver		2	2	2	2
20	Moment of inertia	kgcm ²	20	32	62	92
21	Weight	kg	7	13	20	27
22	Degree of protection	-	55	55	55	55
23	Ambient temperature	C° min...max	-15 +40	-15 +40	-15 +40	-15 +40
24	Winding - protection	-	PTC	PTC	PTC	PTC
25	Cooling method	-	natural	natural	natural	natural
26	Insulation class	-	F	F	F	F
27	Vibration severity	-	G2.5	G2.5	G2.5	G2.5
28	Shaft rotational accuracy	mm	0.035	0.035	0.035	0.035
29	Shaft height tolerance	mm	0.012	0.012	0.012	0.012

¹⁾ Motor mounted on a metallic flange with dimensions 450x450x50 mm3
Ambient temperature 40°C

²⁾ Measured at 25 °C



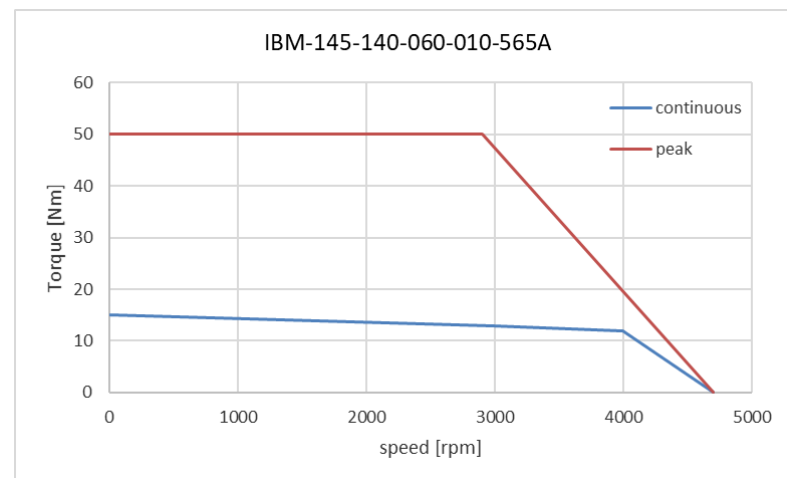
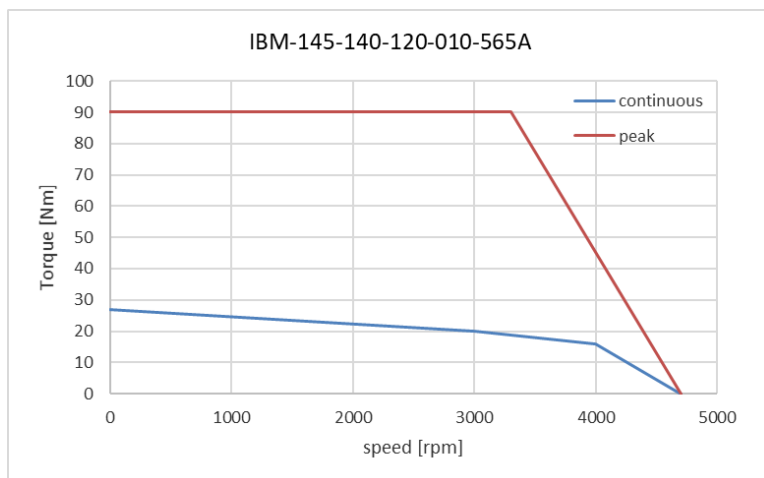
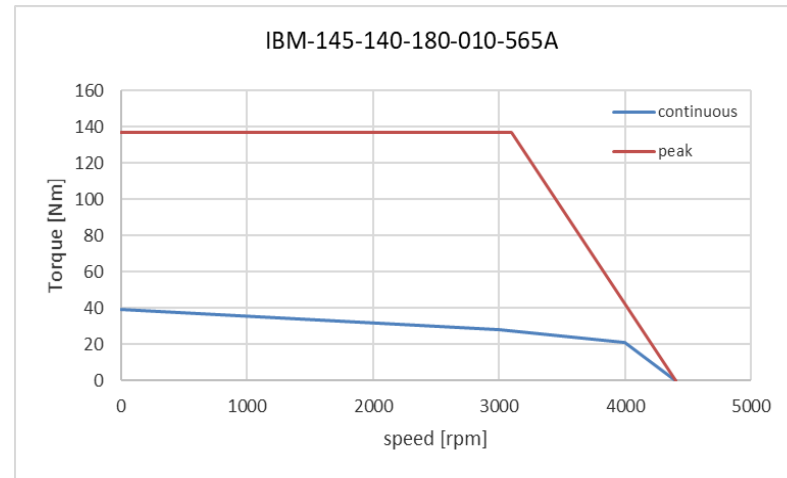
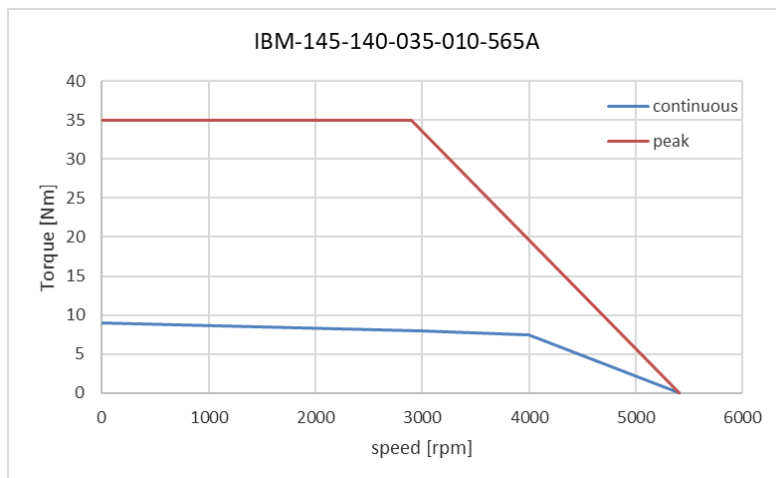
Servomotor IBM-145-140 Dimensions



Type	Size	A (j6)	B	C	D (k6)	E	F	H	K	K1	M	O	P	R	T1	T2 (h9)	U (h9)	U1
IBM-145-140-035	145	130	165	11	24	50	3,5	121	175	218	145	12	188	M8-25	19,9	3	8	40
IBM-145-140-060	145	130	165	11	24	50	3,5	121	200	243	145	12	188	M8-25	19,9	3	8	40
IBM-145-140-120	145	130	165	11	24	50	3,5	145	260	303	145	12	188	M8-25	19,9	3	8	40
IBM-145-140-180	145	130	165	11	24	50	3,5	121	320	363	145	12	188	M8-25	19,9	3	8	40



Servomotor IBM-145-140 Performances





Servomotor IBM-190-170 Specifications

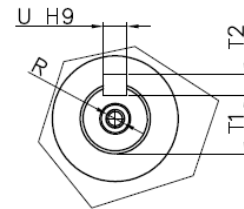
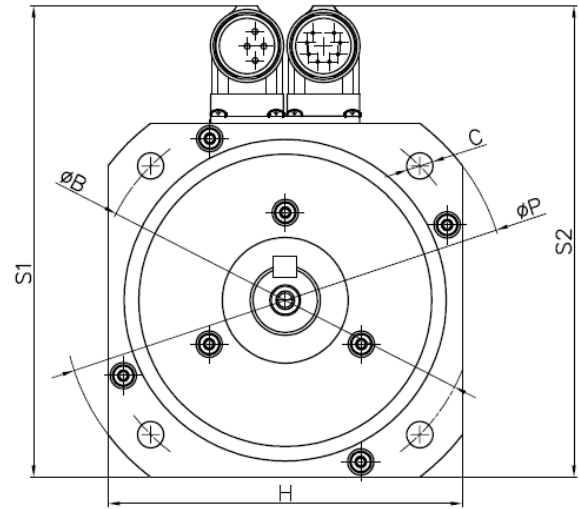
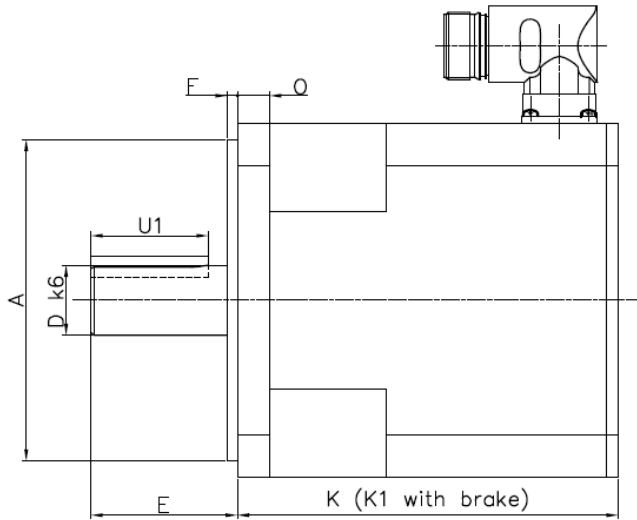
Pos.	Description	Unit	IBM-190-170-060	IBM-190-170-090	IBM-190-170-120
1	Rated Power ¹⁾	kW	6.91	8.80	10.05
2	Rated Torque ¹⁾	Nm	22	28	32
3	Continuous Stall Torque ¹⁾	Nm	25	34	43
4	Peak Torque	Nm	70	103	131
5	Rated current ¹⁾	A _{rms}	18.5	24.6	23.2
6	Rated voltage	V _{DC}	565	565	565
7	Continuous Stall current ¹⁾	A _{rms}	21	30	31
8	Peak current	A _{rms}	71	106	106
9	Rated speed	rot/min	3000	3000	3000
10	Maximum speed	rot/min	6000	6000	5100
11	Resistance ²⁾	Ω	0.35	0.2	0.2
12	Inductance ²⁾	mH	4.5	3	3
13	Torque constant ¹⁾	Nm/A _{rms}	1.19	1.14	1.3793103438
14	BEMF constant ²⁾	V _{rms} /krpm	72.1	72.1	84.9
15	Number of magnetic poles		10	10	10
16	Thermal resistance	C°/W	0.34	0.33	0.33
17	Static friction torque	Nm	0.44	0.56	0.64
18	Resolver model	-	21 RX	21 RX	21 RX
19	Number of poles of the resolver		2	2	2
20	Moment of inertia	kgcm ²	32	42	50
21	Weight	kg	21	26	30
22	Degree of protection	-	55	55	55
23	Ambient temperature	C° min...max	-15 +40	-15 +40	-15 +40
24	Winding - protection	-	PTC	PTC	PTC
25	Cooling method	-	natural	natural	natural
26	Insulation class	-	F	F	F
27	Vibration severity	-	G2.5	G2.5	G2.5
28	Rotational accuracy	mm	0.035	0.035	0.035
29	Shaft height tolerance	mm	0.012	0.012	0.012

¹⁾ Motor mounted on a metallic flange with dimensions 450x450x50 mm³
Ambient temperature 40 °C

²⁾ Measured at 25 °C



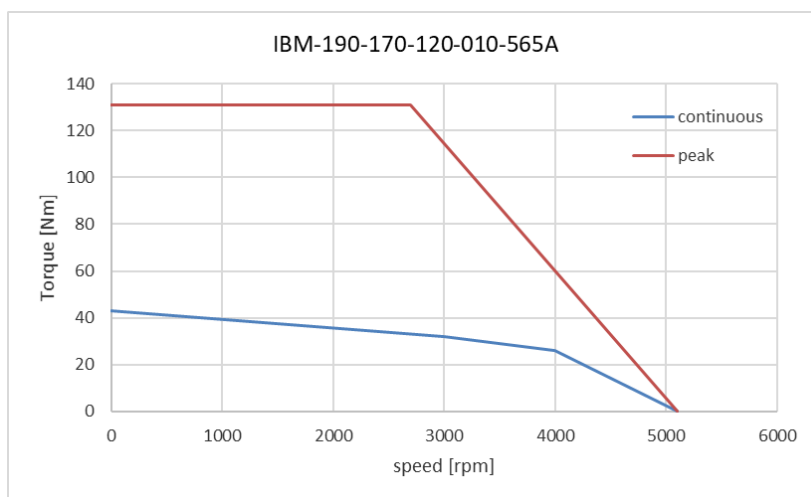
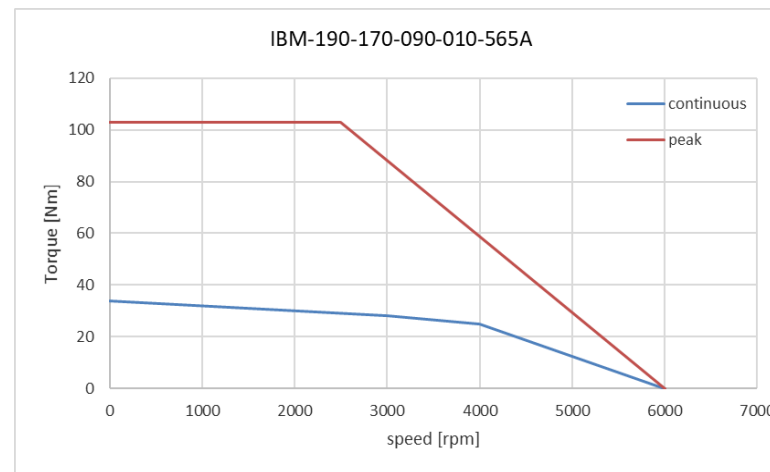
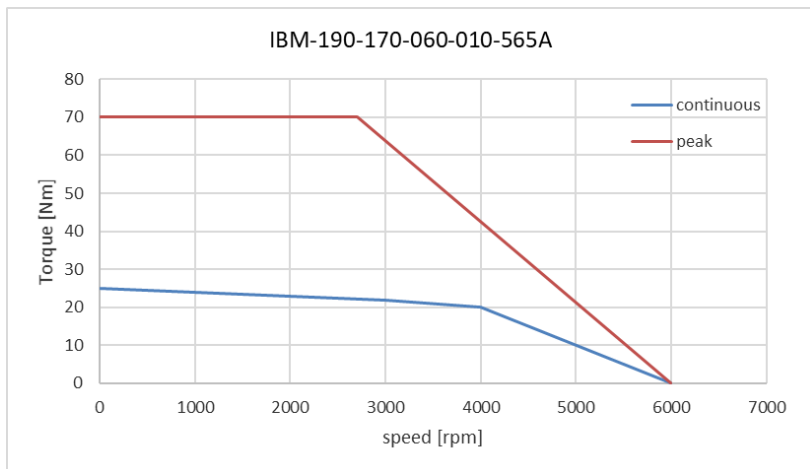
Servomotor IBM-190-170 Dimensions



Type	Size	A (j6)	B	C	D (k6)	E	F	H	K	K1	M	O	P	R	T1	T2 (h9)	U (h9)	U1
IBM-190-170-060	190	180	215	13,5	32	60	4	190	200		190	11	253	M4.16	7,2	3	3	40
IBM-190-170-090	190	180	215	13,5	32	60	4	190	230		190	11	253	M4.16	7,2	3	3	40
IBM-190-170-120	190	180	215	13,5	32	60	4	190	260		190	11	253	M4.16	7,2	3	3	40



Servomotor IBM-190-170 Performances



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