

AKM Washdown and Washdown Food

Servo Motors Suitable for use with Food

More hygienic than standard AKM motors, lighter and more cost-effective than stainless-steel servo motors: In many applications with demanding hygiene requirements the AKM Washdown and Washdown Food versions are good alternatives to costly stainless steel motors or expensive protective enclosures.

Extensive range of options allows up to 150000 variants!

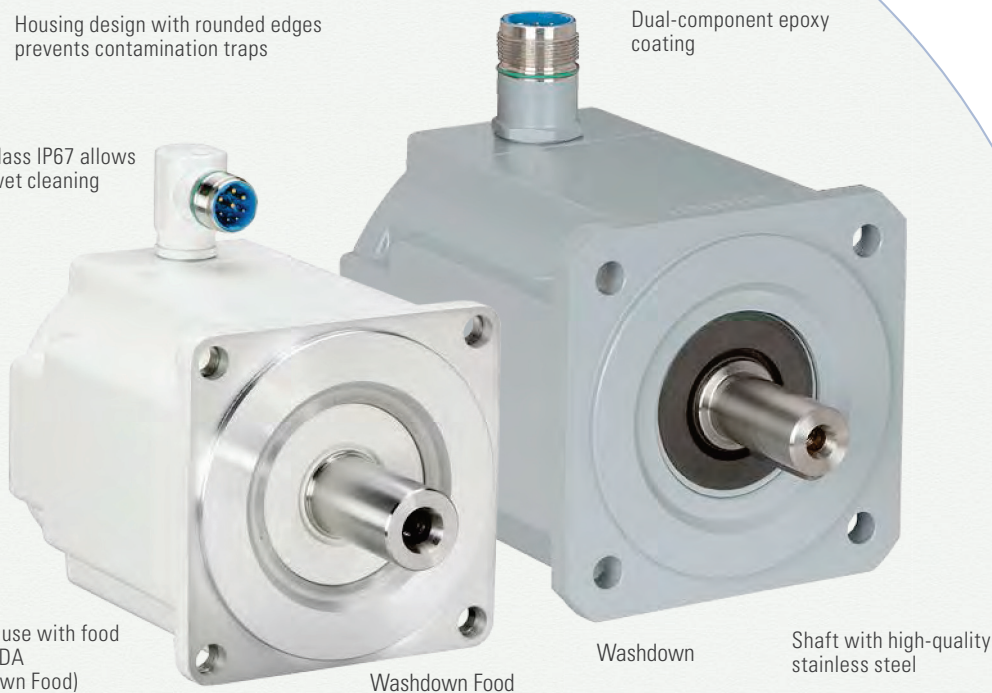
Housing design with rounded edges prevents contamination traps

Dual-component epoxy coating

Protection class IP67 allows for regular wet cleaning

Less weight due to stainless-steel-free housing

Lubricants suitable for use with food and shaft seal as per FDA requirements (Washdown Food)



Washdown Food

Washdown

Shaft with high-quality stainless steel

Chemical-resistant Teflon shaft seal

Specially for applications with demanding hygiene requirements in the

- Packaging industry
- Pharmaceutical industry
- Food industry
- Beverage industry
- Laboratory automation
- Medical device technology



Power Range

AKM frame sizes 2 to 6 with standstill torques of 1 to 25 Nm, supply voltages of 75 to 480 V, large selection of different construction lengths, winding variants, as well as feedback systems and connection technologies.

Application Criteria

Designed for environments with acids, bases, or aggressive substances such as frequent cleaning with cleaning agents with pH values of between 2 and 12.

Housing Coating

The coating material of the AKM Washdown motors is resistant to acids and bases and aggressive substances and meets the global migration requirement of the FDA. The rounded and smooth surfaces prevent hazardous contamination traps and germ formation.

Seals and Bearings

Both Washdown versions meet the IP67 protection rating. The proven AKM PTFE shaft seal is used. For the AKM Washdown Food version, the shaft seal meets FDA requirements and only food-safe lubricants are used.

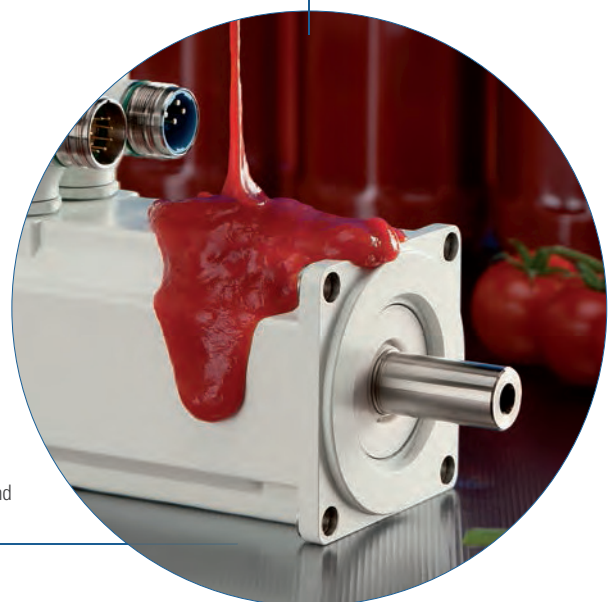
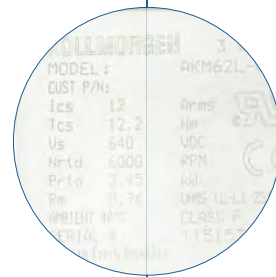
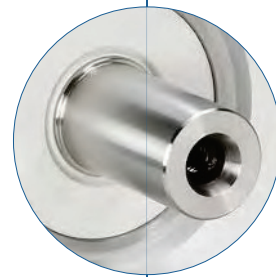
Connectors and Cables

Each in size 1 with special stainless steel design and smooth surface. Cables with special mating connectors are used from stainless steel or a material appropriate for maintaining food quality. The cables are clamped using a special clamping method.

International Standards

UL, CE, FDA*, RoHS

* Global migration requirement



Also proven in harsh environments: The AKM Washdown Food is resistant to most acids and bases, as well as aggressive substances.

AKM Servo Motors

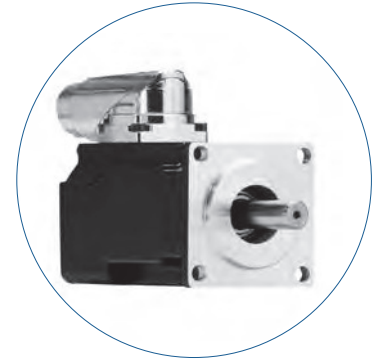
AKM, AKM Washdown, and AKM Washdown Food

Performance Data

AKM type ...	Flange size [mm]	Standstill torque M_0 [Nm]	Standstill current I_0 [A]	Peak torque M_{jmax} [Nm]	75 V DC			115 V			230 V			400 V			480 V			Moment of inertia [kg·cm ²]	Weight [kg]
					Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]		
11B	40	0.18	1.16	0.61	–	–	–	4000	0.18	0.08	8000	0.17	0.14	–	–	–	–	–	–	0.017	0.35
11C	40	0.18	1.45	0.61	–	–	–	6000	0.18	0.11	–	–	–	–	–	–	–	–	–	0.017	0.35
11E	40	0.18	2.91	0.61	6000	0.18	0.11	–	–	–	–	–	–	–	–	–	–	–	–	0.017	0.35
12C	40	0.31	1.51	1.08	–	–	–	4000	0.30	0.13	8000	0.28	0.23	–	–	–	–	–	–	0.031	0.49
12E	40	0.31	2.72	1.08	3000	0.31	0.10	8000	0.28	0.23	–	–	–	–	–	–	–	–	–	0.031	0.49
13C	40	0.41	1.48	1.46	–	–	–	3000	0.41	0.13	8000	0.36	0.30	–	–	–	–	–	–	0.045	0.63
13D	40	0.40	2.40	1.44	2000	0.40	0.08	7000	0.36	0.27	–	–	–	–	–	–	–	–	–	0.045	0.63
21C	60	0.48	1.58	1.47	–	–	–	2500	0.46	0.12	8000	0.39	0.32	–	–	–	–	–	–	0.11	0.82
21E	60	0.50	3.11	1.49	2000	0.48	0.10	7000	0.41	0.30	–	–	–	–	–	–	–	–	–	0.11	0.82
21G	60	0.50	4.87	1.51	4000	0.46	0.19	–	–	–	–	–	–	–	–	–	–	–	–	0.11	0.82
22C	60	0.84	1.39	2.73	–	–	–	1000	0.83	0.09	3500	0.78	0.29	8000	0.68	0.57	8000	0.68	0.57	0.16	1.10
22E	60	0.87	2.73	2.76	1000	0.85	0.09	3500	0.81	0.30	8000	0.70	0.59	–	–	–	–	–	–	0.16	1.10
22G	60	0.88	4.82	2.79	2500	0.83	0.22	7000	0.74	0.54	–	–	–	–	–	–	–	–	–	0.16	1.10
23C	60	1.13	1.41	3.77	–	–	–	1000	1.11	0.12	2500	1.08	0.28	5500	0.99	0.57	7000	0.95	0.70	0.22	1.38
23D	60	1.16	2.19	3.84	–	–	–	1500	1.12	0.18	5000	1.03	0.54	8000	0.92	0.77	8000	0.92	0.77	0.22	1.38
23F	60	1.18	4.31	3.88	1500	1.15	0.18	4500	1.07	0.50	8000	0.94	0.79	–	–	–	–	–	–	0.22	1.38
24C	60	1.38	1.42	4.67	–	–	–	–	–	–	2000	1.32	0.28	4500	1.25	0.59	5500	1.22	0.70	0.27	1.66
24D	60	1.41	2.21	4.76	–	–	–	1500	1.36	0.21	4000	1.29	0.54	8000	1.11	0.93	8000	1.11	0.93	0.27	1.66
24F	60	1.42	3.89	4.82	1000	1.39	0.15	3000	1.33	0.42	8000	1.12	0.94	–	–	–	–	–	–	0.27	1.66
31C	80	1.15	1.37	3.88	–	–	–	–	–	–	2500	1.12	0.29	5000	1.00	0.52	6000	0.91	0.57	0.33	1.55
31E	80	1.20	2.99	4.00	750	1.19	0.09	2500	1.17	0.31	6000	0.95	0.60	–	–	–	–	–	–	0.33	1.55
31H	80	1.23	5.85	4.06	2000	1.20	0.25	6000	0.97	0.61	–	–	–	–	–	–	–	–	–	0.33	1.55
32C	80	2.00	1.44	6.92	–	–	–	–	–	–	1500	1.95	0.31	3000	1.86	0.58	3500	1.83	0.67	0.59	2.23
32D	80	2.04	2.23	7.10	–	–	–	1000	2.00	0.21	2500	1.93	0.51	5500	1.65	0.95	6000	1.58	0.99	0.59	2.23
32E	80	2.04	2.82	7.11	–	–	–	–	–	–	3500	1.87	0.69	7000	1.41	1.03	7000	1.22	1.02	0.59	2.23
32H	80	2.10	5.50	7.26	1200	2.06	0.26	3000	1.96	0.62	7000	1.45	1.06	–	–	–	–	–	–	0.59	2.23
33C	80	2.71	1.47	9.76	–	–	–	–	–	–	1000	2.64	0.28	2000	2.54	0.53	2500	2.50	0.65	0.85	2.9
33E	80	2.79	2.58	9.96	–	–	–	–	–	–	2000	2.62	0.55	4500	2.34	1.10	5000	2.27	1.19	0.85	2.9
33H	80	2.88	5.62	10.22	800	2.82	0.24	2500	2.66	0.70	5500	2.27	1.31	–	–	–	–	–	–	0.85	2.9
41C	90	1.95	1.46	6.12	–	–	–	–	–	–	1200	1.88	0.24	3000	1.77	0.56	3500	1.74	0.64	0.81	2.44
41E	90	2.02	2.85	6.28	–	–	–	1200	1.94	0.24	3000	1.82	0.57	6000	1.58	0.99	6000	1.58	0.99	0.81	2.44
41H	90	2.06	5.6	6.36	1000	1.99	0.21	3000	1.86	0.58	6000	1.62	1.02	–	–	–	–	–	–	0.81	2.44
42C	90	3.35	1.40	11.3	–	–	–	–	–	–	–	–	–	1500	3.10	0.49	2000	3.02	0.63	1.5	3.39
42E	90	3.42	2.74	11.3	–	–	–	–	–	–	1800	3.12	0.59	3500	2.81	2.35	4000	2.72	1.14	1.5	3.39
42G	90	3.53	4.80	11.5	–	–	–	–	–	–	3500	2.90	1.06	6000	2.35	1.48	6000	2.35	1.48	1.5	3.39
42J	90	3.56	8.4	11.6	–	–	–	3000	3.03	0.95	6000	2.36	1.50	–	–	–	–	–	–	1.5	3.39
43E	90	4.70	2.76	15.9	–	–	–	–	–	–	1500	4.24	0.67	2500	3.92	1.03	3000	3.76	1.18	2.1	4.35
43G	90	4.80	4.87	16.1	–	–	–	–	–	–	2500	4.00	1.05	5000	3.01	1.58	6000	2.57	1.61	2.1	4.35
43K	90	4.90	9.60	16.4	–	–	–	2500	4.08	1.07	6000	2.62	1.65	–	–	–	–	–	–	2.1	4.35
44E	90	5.76	2.90	19.9	–	–	–	–	–	–	1200	5.22	0.66	2000	4.80	1.01	2500	4.56	1.19	2.7	5.3
44G	90	5.88	5.00	20.3	–	–	–	–	–	–	2000	4.90	1.03	4000	3.76	1.57	5000	3.19	1.67	2.7	5.3
44J	90	6.00	8.80	20.4	–	–	–	–	–	–	4000	3.84	1.61	6000	2.75	1.73	6000	2.75	1.73	2.7	5.3
51E	115	4.70	2.75	11.6	–	–	–	–	–	–	1200	4.41	0.55	2500	3.98	1.04	3000	3.80	1.19	3.4	4.2
51G	115	4.75	4.84	11.7	–	–	–	–	–	–	2500	4.02	1.05	5000	2.62	1.37	6000	1.94	1.22	3.4	4.2
51H	115	4.79	6.00	11.7	–	–	–	–	–	–	3000	3.87	1.22	6000	1.95	1.23	6000	1.95	1.23	3.4	4.2
51K	115	4.90	9.40	11.9	–	–	–	2500	4.15	1.09	5500	2.35	1.35	–	–	–	–	–	–	3.4	4.2

Performance Data

AKM type ...	Frame size [mm]	Standstill torque M_0 [Nm]	Standstill current I_0 [A]	Peak torque M_{unax} [Nm]	230 V			400 V			480 V			Moment of inertia [kg·cm ²]	Weight [kg]
					Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]	Rated speed n_n [min ⁻¹]	Rated torque M_n [Nm]	Rated power P_n [kW]		
52E	115	8.34	2.99	21.3	–	–	–	1500	7.61	1.20	2000	7.28	1.52	6,2	5.8
52G	115	8.43	4.72	21.5	1200	7.69	1.21	2500	7,06	1.85	3000	6.66	2.09	6,2	5.8
52H	115	8.48	5.90	21.6	1800	7.53	1.42	3500	6.26	2.30	4000	5.77	2.42	6,2	5.8
52K	115	8.60	9.30	21.9	3000	6.80	2.14	5500	3,90	2.25	6000	3.25	2.04	6,2	5.8
52M	115	8.60	13.1	21.9	4500	5.20	2.45	–	–	–	–	–	–	6,2	5.8
53G	115	11.4	4.77	29.7	1000	10.7	1.12	2000	9.85	2.06	2400	9.50	2.39	9,1	7.4
53H	115	11.5	6.60	30.0	–	–	–	3000	8,63	2.77	3500	8.23	3.02	9,1	7.4
53K	115	11.6	9.40	30.3	2000	10.1	2.12	4000	7.65	3.20	4500	6.85	3.23	9,1	7.4
53M	115	11.4	13.4	29.7	3000	8.72	2.74	–	–	–	–	–	–	9,1	7.4
53P	115	11.4	19.1	29.8	5000	5.88	3.08	–	–	–	–	–	–	9,1	7.4
54G	115	14.3	5.00	38.0	–	–	–	1500	12.9	2.03	2000	12.3	2.57	12	9
54H	115	14.2	5.50	37.5	–	–	–	1500	12.6	2.38	2000	12.2	2.56	12	9
54K	115	14.4	9.7	38.4	1800	12.7	2.39	3500	10.0	3.68	4000	9.25	3.87	12	9
54L	115	14.1	12.5	37.5	2500	11.5	3.00	4500	8.13	3.83	–	–	–	12	9
54N	115	14.1	17.8	37.6	3500	9.85	3.61	–	–	–	–	–	–	12	9
62G	142	11.9	4.9	29.7	–	–	–	1800	10.4	1.96	2000	10.2	2.14	17	8.9
62K	142	12.2	9.6	30.2	2000	10.4	2.18	3500	9.00	3.30	4500	8.00	3.77	17	8.9
62M	142	12.2	13.4	30.2	3000	9.50	2.98	6000	5,70	3.58	6000	5.70	3.58	17	8.9
62P	142	12.3	18.8	30.3	4500	8.10	3.82	–	–	–	–	–	–	17	8.9
63G	142	16.5	4.5	42.1	–	–	–	1200	14.9	1.87	1500	14.6	2.29	24	11.1
63K	142	16.8	9.9	42.6	1500	14.9	2.34	3000	12.9	4.05	3500	12.0	4.40	24	11.1
63M	142	17.0	13.8	43.0	2000	14.3	2.99	4000	11.3	4.73	4500	10.5	4.95	24	11.1
63N	142	17.0	17.4	43.0	3000	13.0	4.08	5000	9.60	5.03	6000	7.00	4.40	24	11.1
64K	142	20.8	9.2	53.5	1200	18.8	2.36	2000	17.2	3.60	2500	16.3	4.27	32	13.3
64L	142	21.0	12.8	54.1	1500	18.4	2.89	3000	15.6	4.90	3500	14.4	5.28	32	13.3
64P	142	20.4	18.6	52.9	2500	16.0	4.19	4500	11.9	5.62	5500	9.00	5.18	32	13.3
64Q	142	20.0	20.7	53.2	3000	15.3	4.81	5000	10.7	6.45	6000	7.40	4.65	32	13.3
65K	142	24.8	9.8	64.5	1000	22.8	2.39	2000	20.2	4.23	2200	19.7	4.54	40	15.4
65M	142	25.0	13.6	65.2	1500	21.9	3.44	2500	19.2	5.03	3000	18.1	5.69	40	15.4
65N	142	24.3	17.8	63.7	2000	19.8	4.15	3500	16.0	5.86	4000	14.7	6.16	40	15.4
65P	142	24.5	19.8	64.1	2400	19.1	4.8	4000	14.9	6.24	5000	11.6	6.08	40	15.4
72K	180	29.7	9.3	79.4	–	–	–	1500	25.1	3.94	1800	24.0	4.52	65	19.7
72M	180	30.0	13.0	79.8	–	–	–	2000	23.6	4.94	2500	22.1	5.79	65	19.7
72P	180	29.4	18.7	78.5	1800	23.8	4.49	3000	20.1	6.31	3500	18.2	6.67	65	19.7
72Q	180	29.5	23.5	78.4	2000	23.2	4.89	4000	16.3	6.83	4500	14.1	6.65	65	19.7
73M	180	42.0	13.6	112	–	–	–	1500	33.8	5.31	1800	32.1	6.05	92	26.7
73P	180	41.6	19.5	111	1300	34.7	4.72	2400	28.5	7.16	2800	26.3	7.71	92	26.7
73Q	180	41.5	24.5	111	1500	33.4	5.25	3000	25.2	7.92	3500	22	8.07	92	26.7
74L	180	53.0	12.9	143	–	–	–	1200	43.5	5.47	1400	41.5	6.08	120	33.6
74P	180	52.5	18.5	142	–	–	–	1800	39.6	7.46	2000	35.9	7.52	120	33.6
74Q	180	52.2	26.1	141	1300	41.9	5.71	2500	31.5	8.25	3000	27.3	8.58	120	33.6
82T	260	75	48	210	–	–	–	2500	47.5	12.4	3000	38.0	11.9	172	49
83T	260	130	62	456	–	–	–	2200	70.0	16.1	2500	60.0	15.7	334	73
83V	260	130	91	304	–	–	–	3000	65	20,4	–	–	–	334	73
84T	260	180	67	668	–	–	–	1800	105	19.8	2000	93.0	19.5	495	97

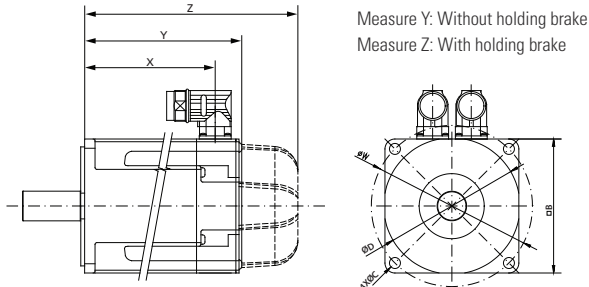


AKM Servo Motors

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Model with Power and Signal Connector

Dimensional drawing for AKM11 - AKM84



All measurement specifications in mm Measure Y: Measurement without holding brake, Measure Z: Measurement with holding brake

Model	X	Resolvers		Comcoder		Biss/Endat		Hiperface		Flange □B	Bolt circle ØW	Bore diameter ØC	Centering collar ØD
		Y	Z	Y	Z	Y	Z	Y	Z				
AKM11	56.1	69.6	106.6	79.0	—	—	—	79	116	40	46	4.3	30
AKM12	75.1	88.6	125.6	98.0	—	—	—	98	135	40	46	4.3	30
AKM13	94.1	107.6	144.6	117.0	—	—	—	117	154	40	46	4.3	30
AKM21	76.1	95.4	129.5	95.4	129.5	95.4	129.5	113.4	147.1	58	63	4.8	40
AKM22	95.1	114.4	148.5	114.4	148.5	114.4	148.5	132.4	166.1	58	63/65 (1)	4.8	40
AKM23	114.1	133.4	167.5	133.4	167.5	133.4	167.5	151.4	185.1	58	63/65 (1)	4.8	40
AKM24	135.1	152.4	186.5	152.4	186.5	152.4	186.5	170.4	204.1	58	63/65 (1)	4.8	40
AKM31	87.9	109.8	141.3	109.8	141.3	109.8	141.3	125.3	159.3	70	75/85 (2)	5.8	60
AKM32	118.9	140.8	172.3	140.8	172.3	140.8	172.3	156.3	190.3	70	75/85 (2)	5.8	60
AKM33	149.9	171.8	203.3	171.8	203.3	171.8	203.3	187.3	221.3	70	75/85 (2)	5.8	60
AKM41	96.4	118.8	152.3	118.8	152.3	118.8	152.3	136.8	170.3	84	90/100 (3)	7	60/80 (3)
AKM42	125.5	147.8	181.3	147.8	181.3	147.8	181.3	165.8	199.3	84	90/100 (3)	7	60/80 (3)
AKM43	154.4	176.8	210.3	176.8	210.3	176.8	210.3	194.8	228.3	84	90/100 (3)	7	60/80 (3)
AKM44	183.4	205.8	239.3	205.8	239.3	205.8	239.3	223.8	257.3	84	90/100 (3)	7	60/80 (3)
AKM51	105.3	127.5	172.5	127.5	172.5	145.0	189.0	145.0	189.0	108	115/130 (4)	7	95/110 (4)
AKM52	136.3	158.5	203.5	158.5	203.5	177.0	220.0	177.0	220.0	108	115/130 (4)	7	95/110 (4)
AKM53	167.3	189.5	234.5	189.5	234.5	208.0	251.0	208.0	251.0	108	115/130 (4)	7	95/110 (4)
AKM54	198.3	220.5	265.5	220.5	265.5	239.0	282.0	239.0	282.0	108	115/130 (4)	7	95/110 (4)
AKM62	130.5	153.7	200.7	153.7	200.7	172.2	219.7	172.2	219.7	138	165	11	130
AKM63	155.5	178.7	225.7	178.7	225.7	197.2	244.7	197.2	244.7	138	165	11	130
AKM64	180.5	203.7	250.7	203.7	250.7	222.2	269.7	222.2	269.7	138	165	11	130
AKM65	205.5	228.7	275.7	228.7	275.7	247.2	294.7	247.2	294.7	138	165	11	130
AKM72	164.5	192.5	234.5	192.5	234.5	192.5	234.5	192.5	234.5	188	215	13.5	180
AKM73	198.5	226.5	268.5	226.5	268.5	235.7	287.3	235.7	287.3	188	215	13.5	180
AKM74	232.5	260.5	302.5	260.5	302.5	269.7	321.3	269.7	321.3	188	215	13.5	180
AKM82	170	267	333	267	333	267	333	267	333	260	300	18.5	250
AKM83	250.5	347.5	413.5	347.5	413.5	347.5	413.5	347.5	413.5	260	300	18.5	250
AKM84	331	428	494	428	494	428	494	428	494	260	300	18.5	250

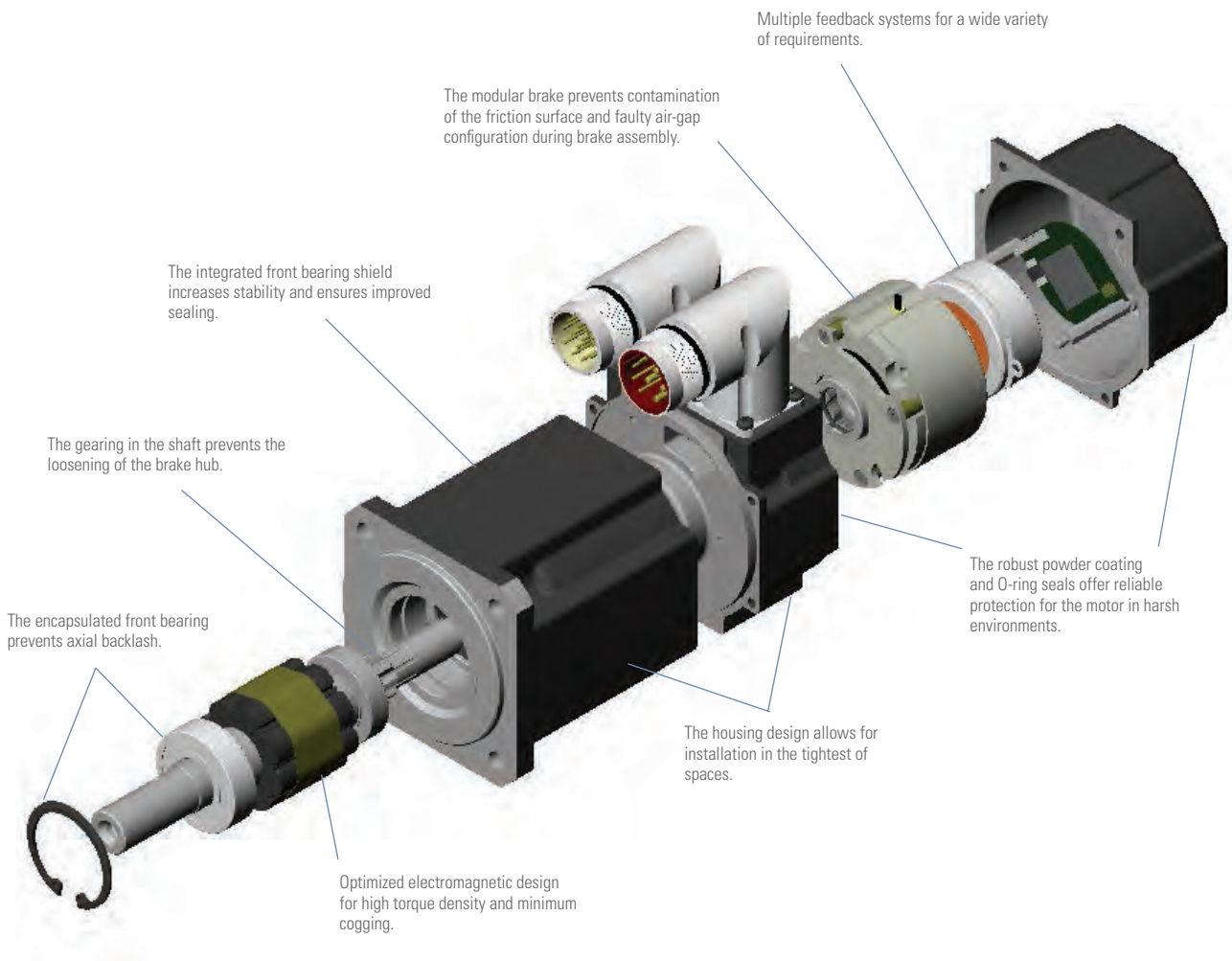
(1) ØW = 63 mm AKM2xx-Ax
ØW = 65 mm AKM2xx-Dx

(2) ØW = 75 mm AKM3xx-Ax
ØW = 85 mm AKM3xx-Cx

(3) ØW = 100 mm, ØV = 80 mm AKM4xx-Ax
ØW = 90 mm, ØV = 60 mm AKM4xx-Cx

(4) ØW = 130 mm ØV = 110 mm AKM5xx-Ax
ØW = 115 mm ØV = 95 mm AKM5xx-Ax

The Design Features of AKM in the 3D Model



Model Nomenclature

AKM Brushless Servo Motor

AKM 6 2 P – A N C N DA 00

AKM Series

Flange Size

- 1 40 mm
- 2 58 mm
- 3 70 mm
- 4 84 mm
- 5 108 mm
- 6 138 mm
- 7 188 mm
- 8 260 mm

Rotor Length

- 1
- 2
- 3
- 4
- 5

Winding Type

- A to Z
- S Special

Flange

- A** IEC with tolerance **N**
- B NEMA
- C Alternative IEC standard
- D Other standard
- G Alternative IEC standard
- H Alternative IEC standard
- R IEC with tolerance R
- M, T Reinforced bearing AKM8
- W Flange coating for Washdown, IEC
- S Special

Version

- 00** **X11, X32**
- 01 With shaft seal
- 0W Washdown
- 0F Washdown Food
- xx Special

Feedback Device

- For all options see opposite page
- S Special

Brake

- 2 24 V holding brake
- N** **Without brake**
- S Special

Connections

- For all options see opposite page
- S Special

Shaft

- C Keyway
- K Open keyway
- N** **Smooth shaft**
- S Special

Note: Options in blue type refer to standard products.