



Synchronous Servomotors AKM

KOLLMORGEN
3 ϕ PM SERVOMOTOR
MODEL AKM72P-ANG
SHOW MOTOR
Ics 18.7 Arms
Tcs 29.4 Nm
Vs 640 VDC
Nrid 3500 RPM
Prtd 6.57 kW
Rm 0.33 OHMS (L)
SERIAL # 034500001
AMBIENT 40°C IP40
CLASS F PATENT
Made in USA www

KOLLMORGEN®

Because Motion Matters™

Synchronous Servomotors AKM

These new servomotors can be driven by all Kollmorgen servo amplifiers. Seven flange sizes and a large number of winding options with optional feedback systems provide maximum flexibility for machine design.

A special production process facilitates the delivery of different frame lengths, winding versions, fixing methods (IEC-NEMA-JIS), various feedback systems and connection methods, all in the shortest possible time. The motors are powder coated mat black.

Power output and dynamics

Compared with everyday servomotors from other manufacturers, AKM motors have a considerably higher power output for a given frame size. The motors have low inertia rotors for high dynamic performance and they exhibit very low cogging.

Features

- standard flange dimensions, j6 fit, accuracy as per DIN 42955, tolerance class N
- vibration class as per EN 60034-14
- insulated for 480V rated mains voltage (230V for AKM1x)
- insulation material class F as per IEC 60085
- shaft end without a fitted-keyway to DIN 748, with threaded hole
- Protection class IP 54
- Mounting sockets for feedback and power connection can be swiveled (AKM2...7).

Feedback

The standard versions of these motors are fitted with 2-pole hollow-shaft resolvers. They can alternatively be fitted with additional feedback systems:

- Smart Feedback Device (SFD, the intelligent Kollmorgen feedback system)
 - high-resolution EnDat or BISS encoder
 - Comcoder (incremental commutating encoder)
- Retrofitting is not possible. The length of the motor varies according to the type of feedback.

Holding Brake

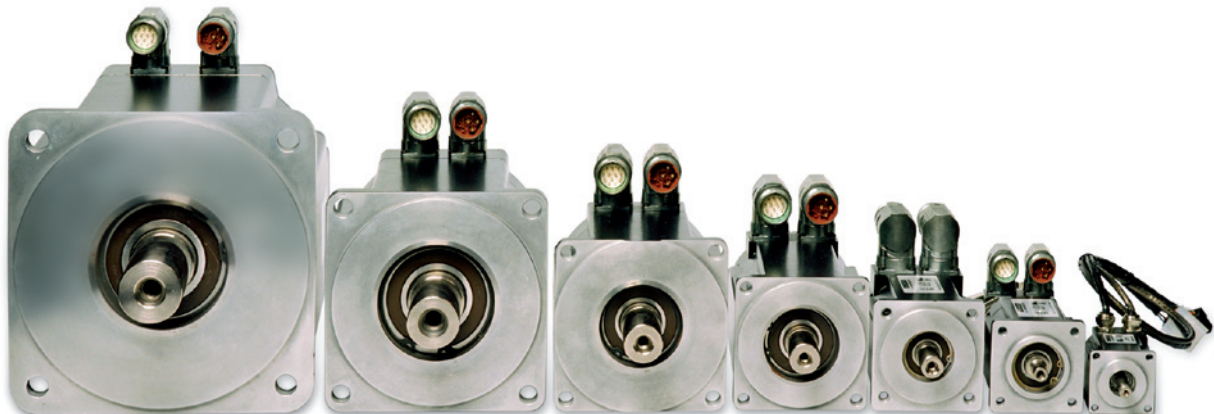
The motors can be supplied with a built-in holding brake as an option. Retrofitting is not possible. The motor is longer if a brake has been built in.

Safety

The winding temperature is monitored and signaled by a PTC temperature sensor in the stator winding.

Options

- Holding brake (AKM2...7)
- Shaft seal (Teflon, IP 65)
- Flange accuracy in accordance with tolerance class R
- Various flange/pitch circle versions (on request)
- Various connection versions (on request)
- Built-in high-resolution BISS encoder
- High-resolution EnDat encoder available in optical and inductive versions
- Built-in Smart Feedback device
- Built-in Comcoder (incremental commutating encoder)



Technical data

Nominal values at 40°C ambient temperature and 100 K temperature rise in the windings motor mounted to a reference mounting plate. Modern motors with compact designs may exhibit high surface temperatures, requiring a derating from the nominal values in some applications.

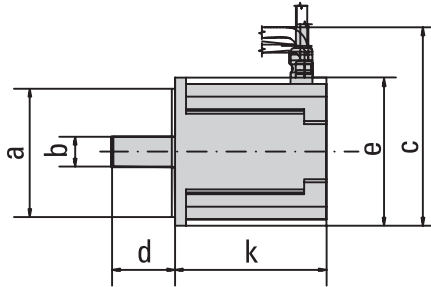
Type	Standstill torque Mo[Nm]	Standstill current Io[A]	nominal speed at rated supply voltage					rotor inertia J[kg cm ²]
			75 V DC n[1/min]	115 V AC n[1/min]	230 V AC n[1/min]	400 V AC n[1/min]	480 V AC n[1/min]	
AKM11-B	0,18	1,16	-	4000	8000	-	-	0,017
AKM11-C	0,18	1,45	-	6000	-	-	-	0,017
AKM11-E	0,18	2,91	6000	-	-	-	-	0,017
AKM12-C	0,31	1,51	-	4000	8000	-	-	0,031
AKM12-E	0,31	2,72	3000	8000	-	-	-	0,031
AKM13-C	0,41	1,48	-	3000	8000	-	-	0,045
AKM13-D	0,40	2,4	2000	7000	-	-	-	0,045
AKM21-C	0,48	1,58	-	2500	8000	-	-	0,11
AKM21-E	0,5	3,11	2000	7000	-	-	-	0,11
AKM21-G	0,5	4,87	4000	-	-	-	-	0,11
AKM22-C	0,84	1,39	-	1000	3500	8000	8000	0,16
AKM22-E	0,87	2,73	1000	3500	8000	-	-	0,16
AKM22-G	0,88	4,82	2500	7000	-	-	-	0,16
AKM23-C	1,13	1,41	-	1000	2500	5500	7000	0,22
AKM23-D	1,16	2,19	-	1500	5000	8000	8000	0,22
AKM23-E	1,16	2,78	-	2500	6500	-	-	0,22
AKM23-F	1,18	4,31	1500	4500	8000	-	-	0,22
AKM24-C	1,38	1,42	-	-	2000	4500	5500	0,27
AKM24-D	1,41	2,21	-	1500	4000	8000	8000	0,27
AKM24-E	1,40	2,79	-	2000	5500	-	-	0,27
AKM24-F	1,42	3,89	1000	3000	8000	-	-	0,27
AKM31-C	1,15	1,37	-	-	2500	5000	6000	0,33
AKM31-E	1,2	2,99	750	2500	6000	-	-	0,33
AKM31-H	1,23	5,85	2000	6000	-	-	-	0,33
AKM32-C	2	1,44	-	-	1500	3000	3500	0,59
AKM32-D	2,04	2,23	-	1000	2500	5500	6000	0,59
AKM32-E	2,04	2,82	-	-	3500	7000	8000	0,59
AKM32-H	2,1	5,5	1200	3000	7000	-	-	0,59
AKM33-C	2,71	1,47	-	-	1000	2000	2500	0,85
AKM33-E	2,79	2,58	-	-	2000	4500	5000	0,85
AKM33-H	2,88	5,62	800	2500	5500	-	-	0,85
AKM41-C	1,95	1,46	-	-	1200	3000	3500	0,81
AKM41-E	2,02	2,85	-	1200	3000	6000	6000	0,81
AKM41-H	2,06	5,6	1000	3000	6000	-	-	0,81
AKM42-C	3,35	1,4	-	-	-	1500	2000	1,5
AKM42-E	3,42	2,74	-	-	1800	3500	4000	1,5
AKM42-G	3,53	4,8	-	-	3500	6000	6000	1,5
AKM42-H	3,54	6,0	-	2000	4500	-	-	1,5
AKM42-J	3,56	8,4	-	3000	6000	-	-	1,5
AKM43-E	4,7	2,76	-	-	1500	2500	3000	2,1
AKM43-G	4,8	4,87	-	-	2500	5000	6000	2,1
AKM43-H	4,82	5,4	-	-	3000	6000	-	2,1
AKM43-K	4,9	9,6	-	2500	6000	-	-	2,1
AKM43-L	4,73	11,2	-	3000	6000	-	-	2,1
AKM44-E	5,76	2,9	-	-	1200	2000	2500	2,7
AKM44-G	5,88	5	-	-	2000	4000	5000	2,7
AKM44-H	5,89	5,6	-	-	2500	5000	6000	2,7
AKM44-J	6	8,8	-	-	4000	6000	6000	2,7
AKM44-K	5,88	10,1	-	2000	5000	-	-	2,7
AKM51-E	4,7	2,75	-	-	1200	2500	3000	3,4
AKM51-G	4,75	4,84	-	-	2500	5000	6000	3,4
AKM51-H	4,79	6,0	-	-	3000	6000	6000	3,4
AKM51-I	4,83	7,5	-	1750	4000	6000	6000	3,4

Technical data

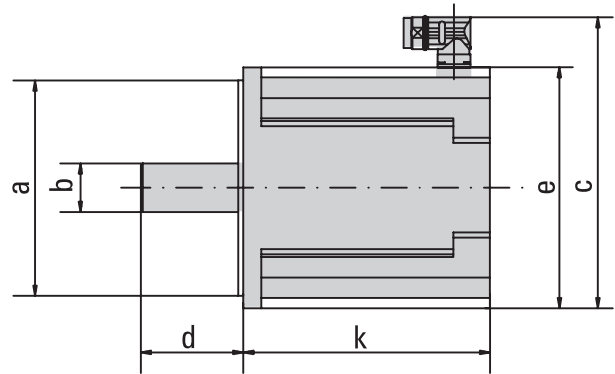
Type	Standstill torque Mo[Nm]	Standstill current Io[A]	nominal speed at rated supply voltage					rotor inertia J[kg cm ²]
			75 V DC n[1/min]	115 V AC n[1/min]	230 V AC n[1/min]	400 V AC n[1/min]	480 V AC n[1/min]	
AKM51-K	4,9	9,4	-	2500	5500	-	-	3,4
AKM51-L	4,89	11,9	-	3000	6000	-	-	3,4
AKM52-E	8,34	3	-	-	-	1500	2000	6,2
AKM52-G	8,43	4,72	-	-	1500	2500	3000	6,2
AKM52-H	8,48	5,9	-	-	1800	3500	4000	6,2
AKM52-I	8,53	7,4	-	-	2250	4500	5000	6,2
AKM52-K	8,6	9,3	-	-	3000	5500	6000	6,2
AKM52-L	8,67	11,6	-	-	3500	6000	6000	6,2
AKM52-M	8,6	13,1	-	-	4500	-	-	6,2
AKM53-G	11,4	4,77	-	-	1000	2000	2400	9,1
AKM53-H	11,51	6,6	-	-	-	3000	3500	9,1
AKM53-I	11,58	7,4	-	-	1750	3250	4000	9,1
AKM53-K	11,6	9,4	-	-	2000	4000	4500	9,1
AKM53-L	11,60	11,8	-	-	3000	5500	6000	9,1
AKM53-M	11,4	13,4	-	-	3000	-	-	9,1
AKM53-P	11,4	19,1	-	-	5000	-	-	9,1
AKM53-Q	11,57	21,1	-	2500	5500	-	-	9,1
AKM54-G	14,3	5	-	-	-	1500	2000	12
AKM54-H	14,19	5,5	-	-	1000	1800	2000	12
AKM54-I	14,42	7,7	-	-	1500	2500	3000	12
AKM54-K	14,4	9,7	-	-	1800	3500	4000	12
AKM54-L	14,1	12,5	-	-	2500	4500	-	12
AKM54-N	14,1	17,8	-	-	3500	-	-	12
AKM54-P	14,36	19,6	-	-	4000	-	-	12
AKM62-G	11,9	4,9	-	-	-	1800	2000	17
AKM62-H	11,9	5,4	-	-	1000	2000	2400	17
AKM62-I	12,1	7,6	-	-	1500	3000	3600	17
AKM62-K	12,2	9,6	-	-	2000	3500	4500	17
AKM62-L	12,2	12,0	-	-	2500	5000	6000	17
AKM62-M	12,2	13,4	-	-	3000	6000	6000	17
AKM62-P	12,3	18,8	-	-	4500	-	-	17
AKM62-Q	12,0	21,8	-	-	5500	-	-	17
AKM63-G	16,5	4,5	-	-	-	1200	1500	24
AKM63-H	16,6	5,6	-	-	-	1500	1800	24
AKM63-I	16,8	7,9	-	-	1200	2000	2500	24
AKM63-K	16,8	9,9	-	-	1500	3000	3500	24
AKM63-L	16,8	11,1	-	-	1800	3000	3500	24
AKM63-M	17	13,8	-	-	2000	4000	4500	24
AKM63-N	17	17,4	-	-	3000	5000	6000	24
AKM63-Q	16,7	22,4	-	-	3500	-	-	24
AKM64-K	20,8	9,2	-	-	1200	2000	2500	32
AKM64-L	21	12,8	-	-	1500	3000	3500	32
AKM64-P	20,4	18,6	-	-	2500	4500	5500	32
AKM64-Q	20,0	20,7	-	-	3000	5000	6000	32
AKM65-K	24,8	9,8	-	-	1000	2000	2200	40
AKM65-L	25,0	12,2	-	-	1300	2500	2800	40
AKM65-M	25	13,6	-	-	1500	2500	3000	40
AKM65-N	24,3	17,8	-	-	2000	3500	4000	40
AKM65-P	24,5	19,8	-	-	2400	4000	5000	40
AKM72-K	29,7	9,3	-	-	-	1500	1800	65
AKM72-L	30,0	11,5	-	-	-	1800	2000	65
AKM72-M	30	13	-	-	-	2000	2500	65
AKM72-P	29,4	18,7	-	-	1800	3000	3500	65
AKM72-Q	29,5	23,5	-	-	2000	4000	4500	65
AKM73-L	42,0	12,1	-	-	-	1400	1500	92
AKM73-M	42	13,6	-	-	-	1500	1800	92
AKM73-P	41,6	19,5	-	-	1300	2400	2800	92
AKM73-Q	41,5	24,5	-	-	1500	3000	3500	92
AKM74-L	53	12,9	-	-	-	1200	1400	120
AKM74-P	52,5	18,5	-	-	-	1800	2000	120
AKM74-Q	52,2	26,1	-	-	1300	2500	3000	120

Dimensions

AKM1x



AKM2x – AKM7x



Type	Mo/Nm	Mmax/Nm	No. of poles	a/mm	b/mm	c/mm	d/mm	e/mm	k/mm
AKM11	0,18	0,6	6	30	8	72	25	40	69,6
AKM12	0,31	1,1	6	30	8	72	25	40	88,6
AKM13	0,40	1,4	6	30	8	72	25	40	107,6
AKM21	0,49	1,5	6	40	9	90	20	58	86,2
AKM22	0,87	2,7	6	40	9	90	20	58	105,2
AKM23	1,16	3,8	6	40	9	90	20	58	124,2
AKM24	1,40	4,8	6	40	9	90	20	58	143,2
AKM31	1,2	4,0	8	60	14	109	30	70	109,8
AKM32	2,0	7,0	8	60	14	109	30	70	140,8
AKM33	2,8	10,0	8	60	14	109	30	70	171,8
AKM41	2,0	6,3	10	80	19	123	40	84	118,8
AKM42	3,4	11,3	10	80	19	123	40	84	147,8
AKM43	4,8	16,1	10	80	19	123	40	84	176,8
AKM44	5,9	20,2	10	80	19	123	40	84	205,8
AKM51	4,9	11,7	10	110	24	147	50	108	127,5
AKM52	8,6	21,7	10	110	24	147	50	108	158,5
AKM53	11,6	29,8	10	110	24	147	50	108	189,5
AKM54	14,4	37,8	10	110	24	147	50	108	220,5
AKM62	12,3	30,1	10	130	32	177	58	138	153,7
AKM63	17,0	42,6	10	130	32	177	58	138	178,7
AKM64	21,0	53,5	10	130	32	177	58	138	203,7
AKM65	25,0	64,5	10	130	32	177	58	138	228,7
AKM72	30,0	79,0	10	180	38	227	80	188	192,5
AKM73	42,0	112,0	10	180	38	227	80	188	226,5
AKM74	53,0	142,0	10	180	38	227	80	188	260,5

Type	Flange	Standstill torque
AKM1x	40	0,18...0,41
AKM2x	58	0,48...1,42
AKM3x	70	1,15...2,88
AKM4x	84	1,95...6
AKM5x	108	4,70...14,42
AKM6x	138	11,90...25
AKM7x	188	29,40...53

0 0,5 1 2,5 5 10 20 30 40 50 60 Nm

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