

KOLLMORGEN AKM "LOW VOLTAGE" SERVO MOTORS
 CATALOG DATA SHEET - MOTOR WINDING DATA



Because Motion Matters™

Winding	UNITS	AKM11F	AKM12E	AKM21J	AKM22H	AKM31K
MAX RATED DC BUS VOLTAGE	Vdc	75	160	75	160	160
CONT TORQUE	Nm	0,18	0,31	0,43	0,88	1,25
CONT CURRENT	Arms	3,87	2,73	7,13	5,41	9,1
CONT TORQUE	Nm	0,14	2,19	0,34	0,7	1
MAX MECHANICAL SPEED	RPM	8000	8000	8000	8000	8000
PEAK TORQUE	Nm	0,59	1,05	1,38	2,8	4,12
PEAK CURRENT	Arms	15,5	10,9	28,5	21,6	36,4

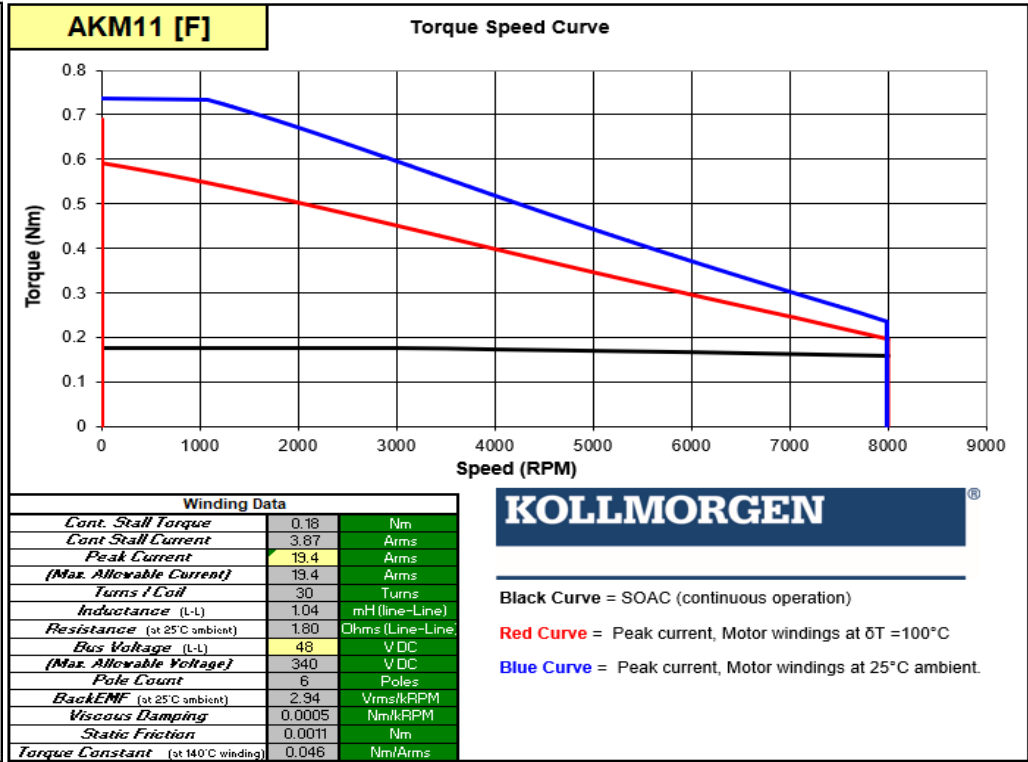
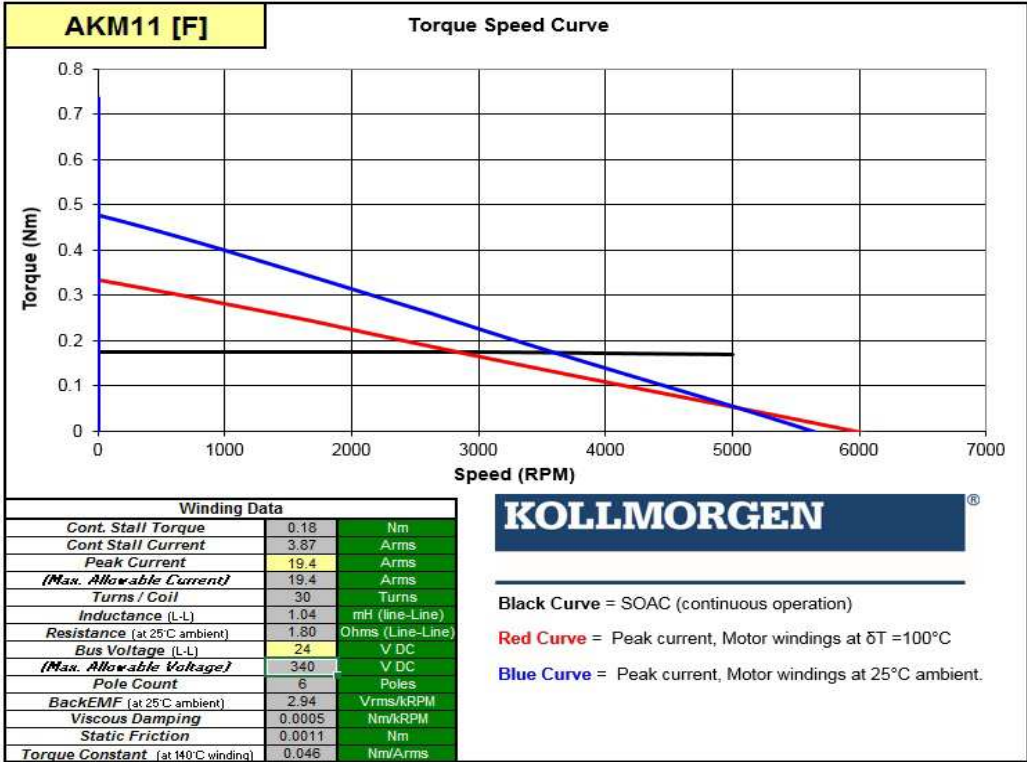
48 Vdc	RATED TORQUE (SPEED)	Nm					1,23
	RATED SPEED	RPM					2000
	RATED POWER	kW					0,26
75 Vdc	RATED TORQUE (SPEED)	Nm	0,16	0,3	0,35	0,823	1,19
	RATED SPEED	RPM	8000	3000	8000	3000	3500
	RATED POWER	kW	0,13	0,1	0,29	0,26	0,44
160 Vdc	RATED TORQUE (SPEED)	Nm		0,27		0,703	0,76
	RATED SPEED	RPM		8000		8000	8000
	RATED POWER	kW		0,23		0,59	0,64

TORQUE CONSTANT	Nm-Arms	0,0456	0,1125	0,06	0,1632	0,1395
BACK EMF CONSTANT	Vrms/krpm	2,94	7,24	3,9	10,51	8,98
RESISTANCE (LINE-LINE)	Ohms	1,8	3,9	0,68	1,4	0,58
INDUCTANCE (LINE-LINE)	mH	1,04	2,68	0,76	2,57	1,019

INERTIA	kg-cm ²	0,017	0,031	0,107	0,161	0,33
OPTIONAL BRAKE INERTIA	kg-cm ²	N/A	N/A	0,0116	0,0116	0,0116
WEIGHT	kg	0,35	0,49	0,82	1,1	1,55
STATIC FRICTION	Nm	0,0011	0,0021	0,002	0,005	0,014
JVISCOUS DAMPING	Nm/krpm	0,0005	0,001	0,0046	0,0055	0,002
THERMAL TIME CONSTANT	mins	4	6	8	9	14
THERMAL RESISTANCE	degC/W	1,83	1,63	1,43	1,19	1,11
POLE PAIRS	#	3	3	3	3	4
HEATSINK SIZE	in.	10 x 10 x 1/4				

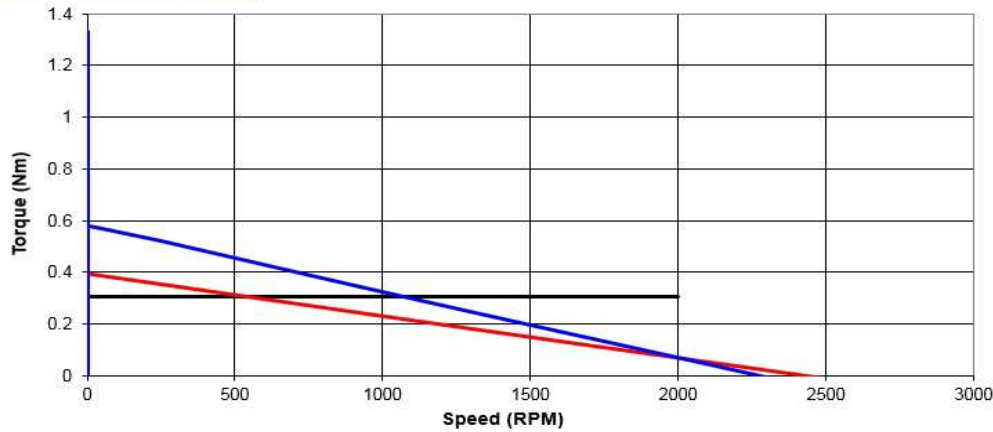
WINDING DOC REVISION	-	BR	BM	BT	BP	BN
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9/17/2018, JRB



AKM12-A [E]

Torque Speed Curve



Winding Data

Cont. Stall Torque	0.30	Nm
Cont Stall Current	2.73	Arms
Peak Current	13.6	Arms
(Max. Allowable Current)	13.6	Arms
Turns / Coil	37	Turns
Inductance (L-L)	2.68	mH (line-Line)
Resistance (at 25°C ambient)	3.90	Ohms (Line-Line)
Bus Voltage (L-L)	24	V DC
(Max. Allowable Voltage)	340	V DC
Pole Count	6	Poles
BackEMF (at 25°C ambient)	7.24	Vrms/kRPM
Viscous Damping	0.001	Nm/kRPM
Static Friction	0.0021	Nm
Torque Constant (at 140°C winding)	0.112	Nm/Arms



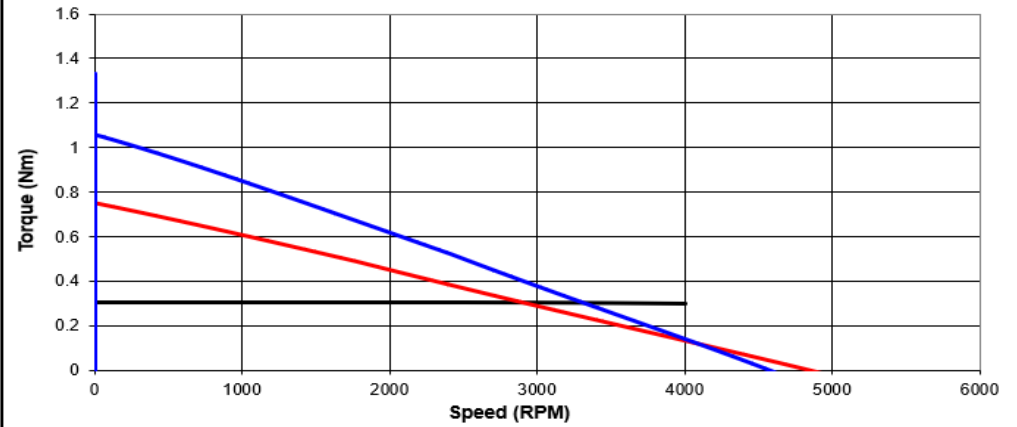
Black Curve = SOAC (continuous operation)

Red Curve = Peak current, Motor windings at $\delta T = 100^\circ\text{C}$

Blue Curve = Peak current, Motor windings at 25°C ambient.

AKM12-A [E]

Torque Speed Curve



Winding Data

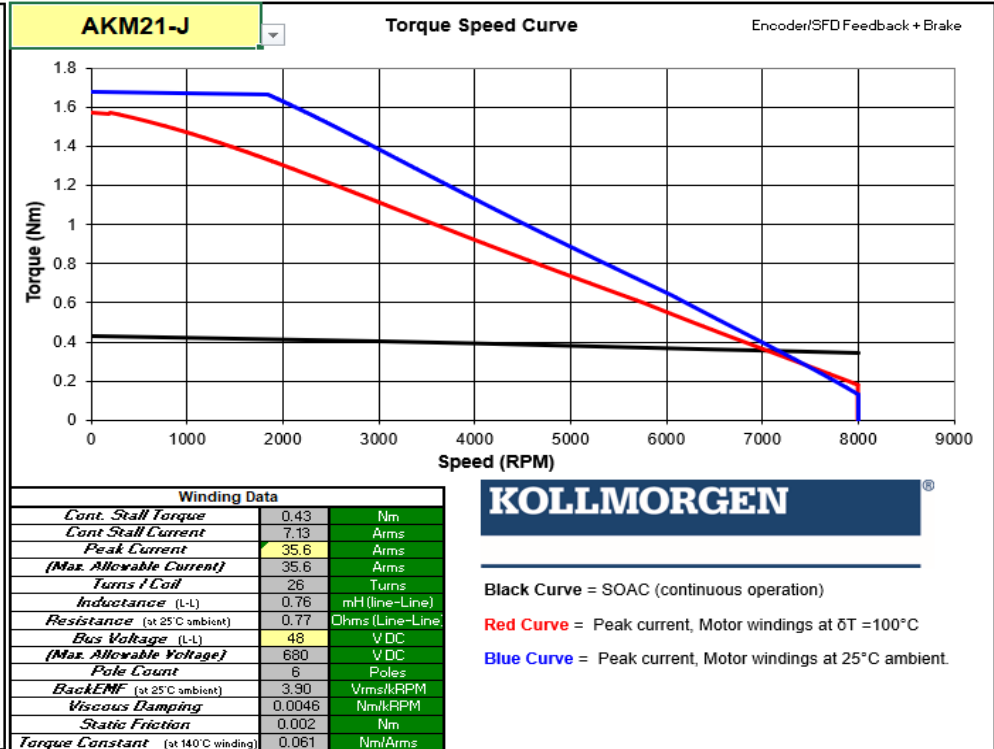
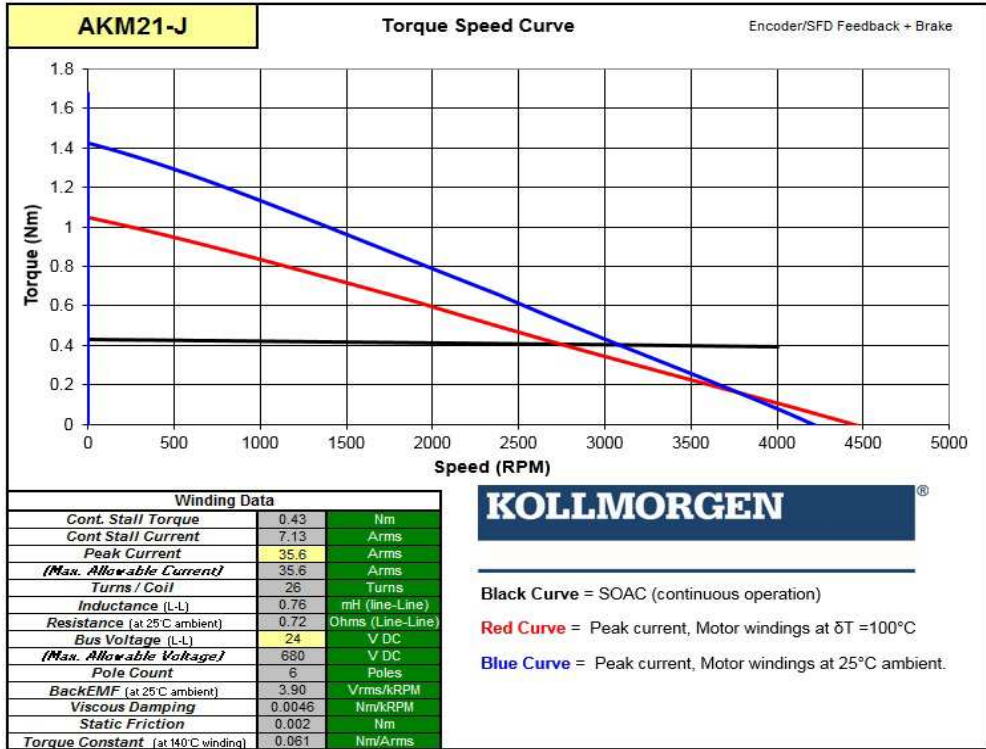
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Turns / Coil	37	Turns
Inductance (L-L)	2.68	mH (line-Line)
Resistance (at 25°C ambient)	3.90	Ohms (Line-Line)
Bus Voltage (L-L)	48	V DC
(Max. Allowable Voltage)	340	V DC
Pole Count	6	Poles
BackEMF (at 25°C ambient)	7.24	Vrms/kRPM
Viscous Damping	0.001	Nm/kRPM
Static Friction	0.0021	Nm
Torque Constant (at 140°C winding)	0.112	Nm/Arms



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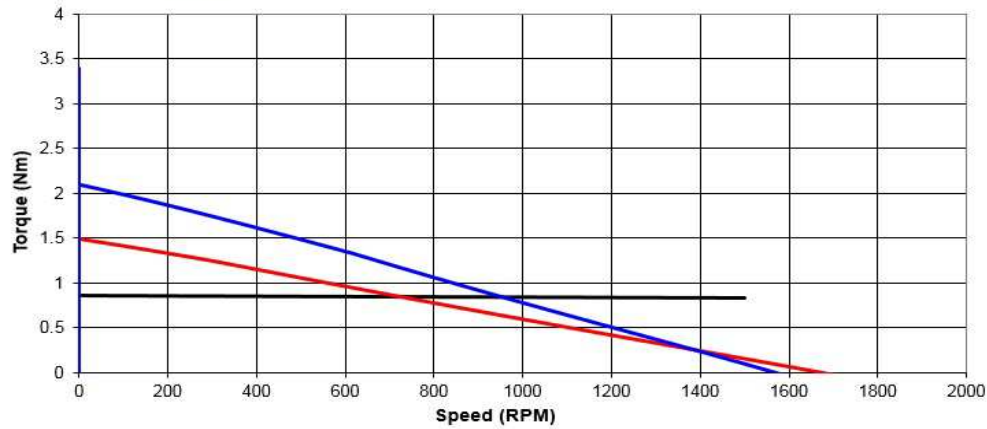
Blue Curve = Peak current, Motor windings at 25°C ambient.



AKM22-S4 [H]

Torque Speed Curve

Encoder/SFD Feedback + Brake



Winding Data

Cont. Stall Torque	0.86	Nm
Cont Stall Current	5.41	Arms
Peak Current	27.1	Arms
(Max. Allowable Current)	27.1	Arms
Turns / Coil	35	Turns
Inductance (L-L)	2.57	mH (line-Line)
Resistance (at 25°C ambient)	1.46	Ohms (Line-Line)
Bus Voltage (L-L)	24	V DC
(Max. Allowable Voltage)	680	V DC
Pole Count	6	Poles
BackEMF (at 25°C ambient)	10.51	Vrms/kRPM
Viscous Damping	0.0055	Nm/kRPM
Static Friction	0.005	Nm
Torque Constant (at 140°C winding)	0.163	Nm/Arms



Black Curve = SOAC (continuous operation)

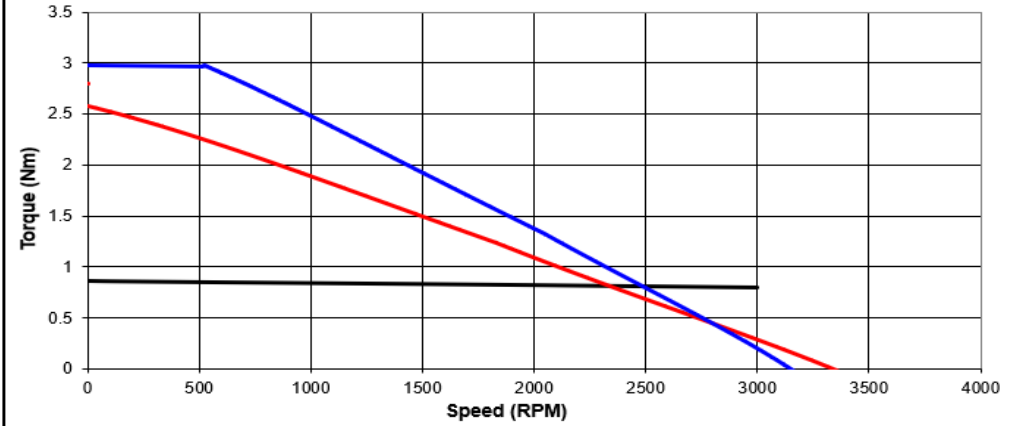
Red Curve = Peak current, Motor windings at $\delta T = 100^\circ\text{C}$

Blue Curve = Peak current, Motor windings at 25°C ambient.

AKM22-S4 [H]

Torque Speed Curve

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