



AMKASYN

Servo motors DS

Technical Data

Version: 2018/03

Part-No.: 27858

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AMK

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1 AMKASYN Synchronous servo motors DS

The synchronous servo motors DS feature compact frame sizes, high dynamic response and wide speed range.

These brushless, permanent magnet AC servo motors are available in 4 and 6-pole versions.

The use of rare-earth magnets provide especially high energy density and permits short term high overload for the highest demand on dynamic response.

These motors can be used for speed control, positioning tasks, synchronous and stepping motor operation, in combination with the digital AMK inverters type AMKASYN.

Features

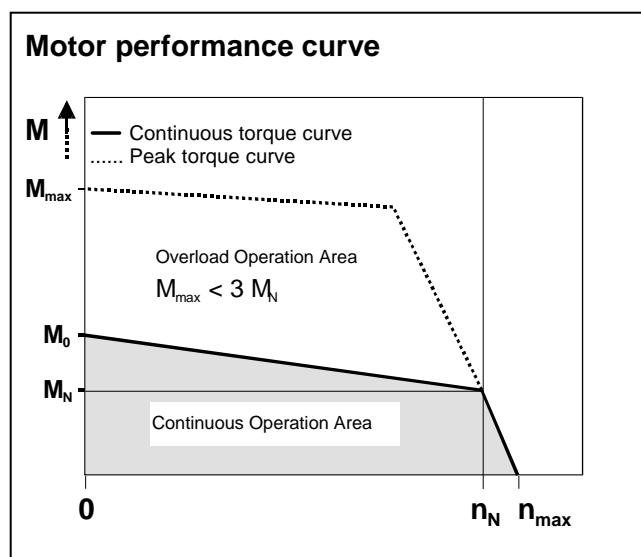
- Low maintenance
- Compact
- Lifetime lubricated bearings
- TENV (totally enclosed non-ventilated) or
- TEFC (totally enclosed fan cooled)
- High overload capacity
- High peak torque
- Sinusoidal commutation

Standard version

Mounting:	B5-Metric flange
Degree of protection:	IP 54
Connections:	Plug style connector system
Position feedback:	Resolver
Keyway:	Standard

Options

- Holding brake
- Optical position encoder
- Smooth shaft



2 Technical data DS 3 to DS 5

Rated voltage 190V, TENV (Totally Enclosed Non-ventilated)

Motor type	M ₀ [Nm]	M _N [Nm]	P _N [kW]	I _N [A]	n _N [1/min]	n _{max} [1/min]	k _T [Nm/A]	J *10 ⁻³ [kgm ²]	m [kg]	L [mm]	LBr [mm]
DS 3-0.3-4-0-6000	0,4	0,35	0,24	1,1	6600	7400	0,33	0,02	2,5	195	-----
DS 4-1-6-0-4000	1,6	1,2	0,53	2	4200	4500	0,6	0,11	3	170	206
DS 4-2-6-0-4000	3,2	2,5	1,1	4	4100	4400	0,63	0,22	5	230	266
DS 5-3-6-0-4000	3,5	3,1	1,3	5,3	4100	4300	0,6	0,25	8,5	220	272

The value "0,01s" must be entered as parameter T_R for all synchronous motors!

Rated voltage 350V, TENV (Totally Enclosed Non-ventilated)

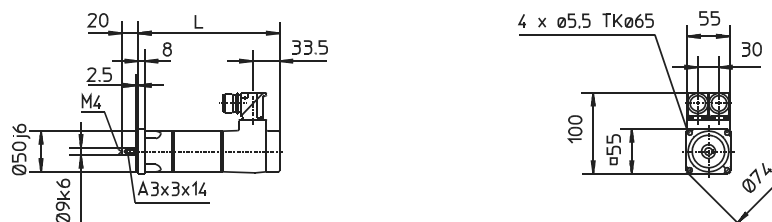
Motor type	M ₀ [Nm]	M _N [Nm]	P _N [kW]	I _N [A]	n _N [1/min]	n _{max} [1/min]	k _T [Nm/A]	J *10 ⁻³ [kgm ²]	m [kg]	L [mm]	LBr [mm]
DS 3-0.3-4-0-6000	0,4	0,35	0,24	0,6	6600	7400	0,62	0,02	2,5	195	-----
DS 4-1-6-0-4000	1,6	1,2	0,53	1,1	4200	4500	1,1	0,11	3	170	206
DS 4-2-6-0-4000	3,2	2,5	1,1	2,1	4100	4400	1,2	0,22	5	230	266
DS 5-3-6-0-4000	3,5	3,1	1,3	2,9	4100	4300	1,1	0,25	8,5	220	272
DS 5-5-6-0-4000	5,7	5,2	2,2	4,7	4100	4200	1,1	0,42	10	280	332

The value "0,01s" must be entered as parameter T_R for all synchronous motors!

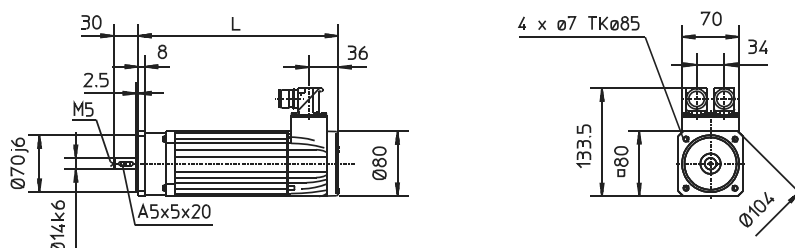
3 Dimensions DS 3 to DS 5

Dimensions in mm

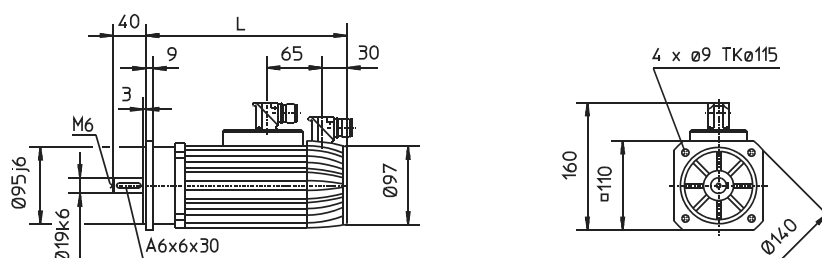
DS 3



DS 4



DS 5



4 Technical data DS 7 and DS 10

Rated voltage 350V, TENV (Totally Enclosed Non-ventilated)

Motor type	M ₀ [Nm]	M _N [Nm]	P _N [kW]	I _N [A]	n _N [1/min]	n _{max} [1/min]	k _T [Nm/A]	J *10 ⁻³ [kgm ²]	m [kg]	L [mm]	LBr [mm]
DS 7-7-6-0-3000	8,5	6,5	2,1	4,1	3000	3200	1,6	1,2	14	265	310
DS 7-13-6-0-3000	15,5	12	3,8	7,1	3000	3100	1,7	2,1	23	355	400
DS 10-18-6-0-3000	24	17	5,4	10	3050	3100	1,7	9,5	35	295	374
DS 10-30-6-0-3000	35	28	8,9	16	3050	3100	1,8	17	48	375	454

The value "0,01s" must be entered as parameter T_R for all synchronous motors!

Rated voltage 350V, TEFC (Totally Enclosed Fan Cooled)

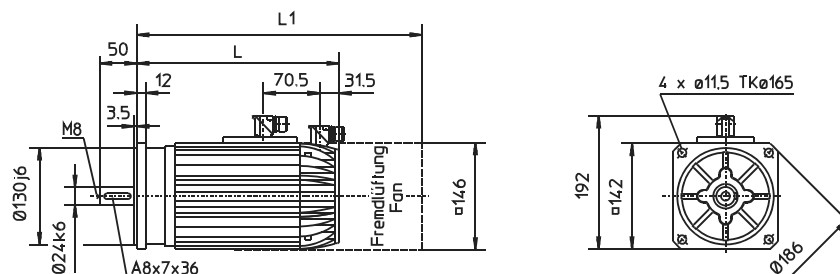
Motor type	M ₀ [Nm]	M _N [Nm]	P _N [kW]	I _N [A]	n _N [1/min]	n _{max} [1/min]	k _T [Nm/A]	J *10 ⁻³ [kgm ²]	m [kg]	L1 [mm]	L1Br [mm]
DS 7-11-6-F-3000	12	11	3,5	7	3050	3200	1,6	1,2	19	377	422
DS 7-19-6-F-3000	20	19	6	12	3050	3100	1,6	2,1	28	467	512
DS 10-27-6-F-3000	29	27	8,5	16,5	3050	3100	1,6	9,5	45	420	499
DS 10-45-6-F-3000	47	45	14	26	3050	3100	1,7	17	58	500	579

The value "0,01s" must be entered as parameter T_R for all synchronous motors!

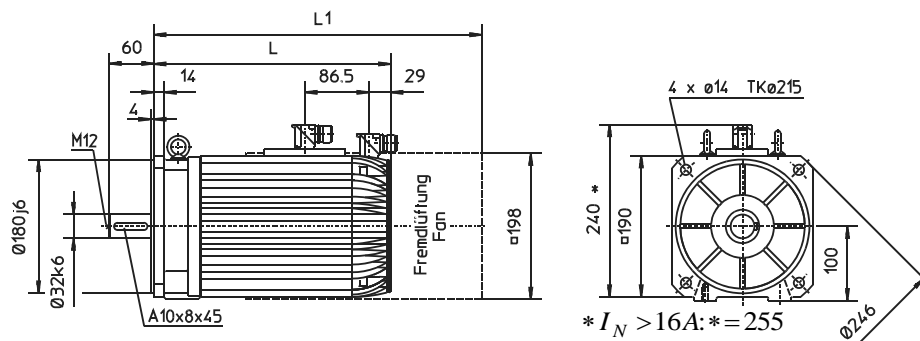
5 Dimensions DS 7 and DS 10

Dimensions in mm

DS 7



DS 10



6 AMKASYN motor name plate (Synchronous motor DS)

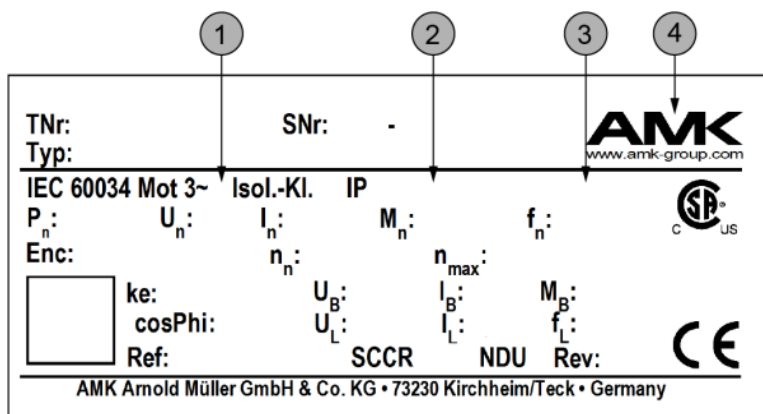


Illustration as an example: Content and scope can differ

Legend:

Abbreviation	Designation
1	Connection type
2	Duty type
3	Weight
4	Manufacturer
TNr	Part number
SNr	Serial number (year + calendar week – consecutive number)
Typ	Type designation
Isol.-Kl.	Insulation class
IP	Type of protection according to EN 60529
P _n	Rated power
U _n	Rated voltage
I _n	Rated current
M _n	Rated torque
f _n	Rated frequency
Enc	Motor encoder resolution
n _n	Rated speed
n _{max}	Max. speed of the output shaft of the system
ke	Voltage constant

Abbreviation	Designation
U _B	Data on the motor holding brake: brake voltage
I _B	Data on the motor holding brake: brake current
M _B	Data on the motor holding brake: min. static brake torque
cosPhi	Power factor
U _L	Data on the fan: fan voltage
I _L	Data on the fan: fan current
f _L	Data on the fan: fan frequency
Ref	Customer material number
SCCR	Short Circuit Current Rating
NDU	Non Dual-use
Rev	Revision

Encoder type:
 R: Resolver
 T/S: Absolute encoder
 B: Holding brake
 F: External fan

Number of motor poles

DS5 - 3 - 6 - R - 00 - 4000

AMK	Arnold Müller GmbH & Co. KG D-73230 Kirchheim/Teck		S.-Nr.	-	VDE 0530-T1:1995								
	Type	DS5 - 3 - 6 - R - 00	T _R	0.01 s	ISO.-KL.		LÜFTER / FAN	BREMSE / BRAKE					
P	1.3 kW	M	3.1 Nm	U	350 V	I	2.9 A	f	Hz	U _L	V	U _{Br}	V
	n/n _{max}		4000 r/min	Encoder	128	P/Rev.	I _L	A	I _{Br}	A			
KD-Nr:					IP 54	f _L	Hz	M _{Br}	Nm				

M:
Nominal motor torque

n:
Nominal motor speed

TR:
Rotor time constant
(fix value: 0.01ms)

I:
Nominal motor current

P/Rev.:
Encoder periods per
revolution (fix value: 128 per./rev)

7 Imprint

Title **AMKASYN Motors DS**

Objective **Technical data and Dimensions of the Motor series DS**

Part-Number **27858**

History

Date
1999/23
2018/03

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- Nameplate data
- Software version
- System configuration and application
- Description of problem and presumed cause of failure
- Diagnostic message (error code)

Publisher

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