AMKASYN
Liquid-cooled
Main Spindle Motors DW
Technical Data

Version: 2018/03
Part-No.: 27869

Content

1 AMKASYN Liquid-cooled main spindle motors DW

These liquid-cooled three-phase asynchronous motors feature compact frame sizes at high power density.

Due to the liquid-cooled design of these motors the thermal influences on the immediately surrounding components and area are reduced to a minimum as compared to fan cooled designs. The created waste heat can be reclaimed easily for other inhouse processes.

AMKASYN main spindle motors DW feature a constant power speed range of 1:3, rated power up to 28kW and rated torque up to 150 Nm. The heavy duty design and strengthened bearings permit high radial loads.

AMKASYN main spindle motors DW in addition display very good servo properties. They can be used in speed control, position and synchronous control in combination with the digital AMK inverters type AMKASYN.

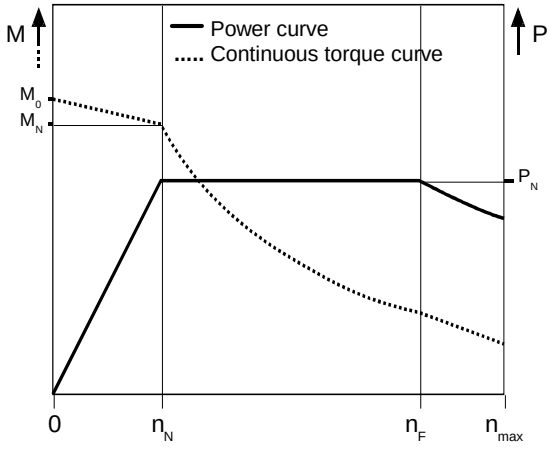
Features

- Low maintenance
- Compact
- High power density
- No thermal influence on surrounding components
- Heavy duty bearings
- High overload capacity
- Outstanding servo properties

Standard version

Mounting:	B5-Metric flange
Degree of protection:	IP 54
Connections:	Terminal box
Position feedback:	Optical sine wave encoder , Type I
Keyway:	None (smooth shaft)

Motor performance curve



Options

- Shaft with keyway
- Higher vibration serverity grade
- Tighter runout tolerances

Liquid cooling requirements

- Inlet temperature 15 to 30 Cº degrees Celsius
- Maximum input pressure: 1 bar (with high-grade steel casing 4 bar)
- Closed circuit cooling system
- In chase of water cooling please follow AMK recommendations for the water quality.

2 Technical data DW

Rated voltage 350V

Motor type	M_0 [Nm]	M_N [Nm]	P_N [kW]	I_N [A]	I_M [A]	I_{M1} [A]	T_R [s]	n_N [1/min]	n_F [1/min]	n_{max} [1/min]	J $*10^{-3}[kgm^2]$	m [kg]	Q [l/min]	ΔT [K]	L [mm]	L Br [mm]
DW 7-17-4-W- 3000	14	13	4	11	5,0	3,0	0,045	3000	5500	5500	1,7	22	2	10	345	-----
DW 7-33-4-W- 3000	25	23	7,2	20	9,0	5,6	0,07	3000	5500	5500	3,2	30	2	10	450	-----
DW 10-40-4-W- 1500	43	40	6	15	9,35	5,2	0,17	1500	4500	5500	18	68	2	10	435	555
DW 10-55-4-W- 1800	56	53	10	22	8,0	5,0	0,14	1800	3600	5500	22	85	3	10	535	655
DW 13-60-4-W- 1500	68	60	9,5	23	8,0	4,5	0,28	1500	3000	5000	46	80	3	10	360	455
DW 13-100-4-W-1500	100	95	15	32	10,5	6,3	0,28	1500	3000	5000	80	115	5	10	465	560
DW 13-150-4-W-1800	155	148	28	63	26,0	15,0	0,4	1800	3200	5000	120	170	6	10	615	710

3 AMKASYN Motor name plate (asynchronous motor DW)

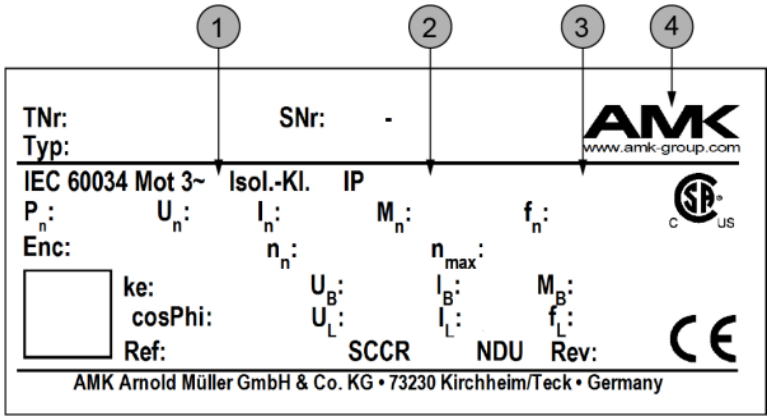
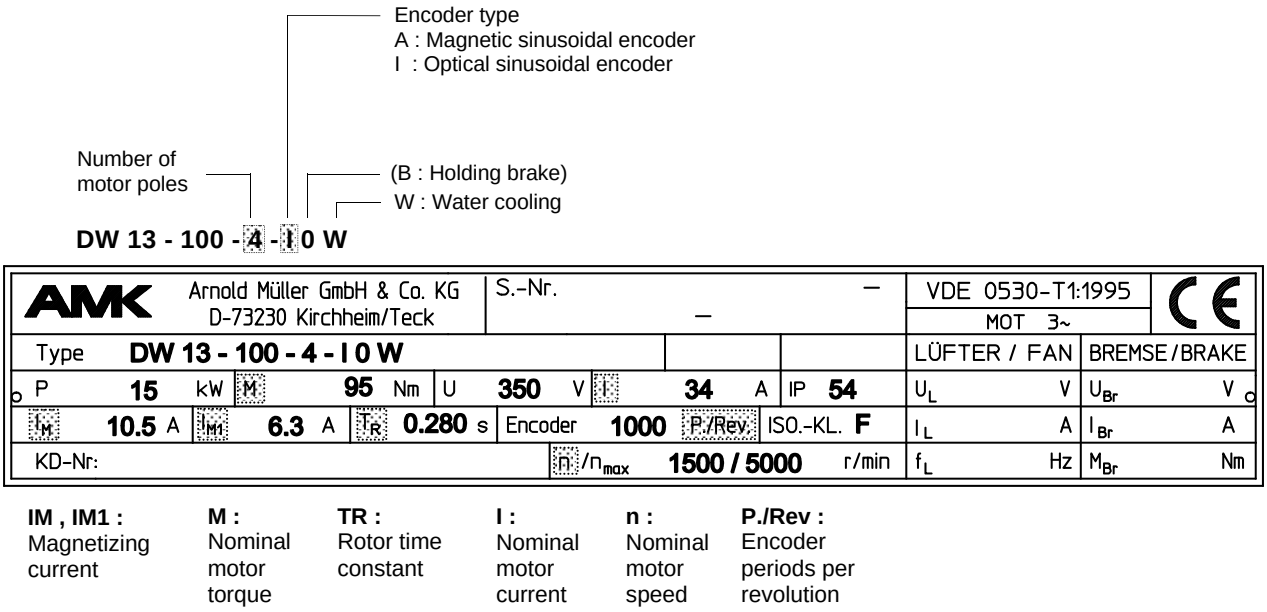


Illustration as an example: Content and scope can differ

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 voltage
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



IM , IM1 : Magnetizing current

M : Nominal motor torque

TR : Rotor time constant

I : Nominal motor current

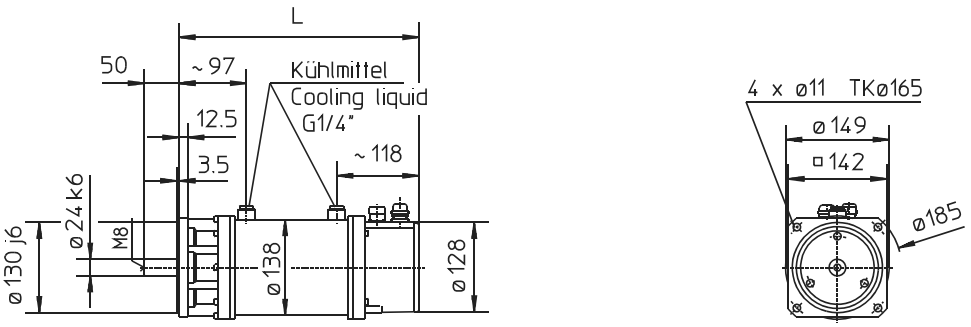
n : Nominal motor speed

P./Rev : Encoder periods per revolution

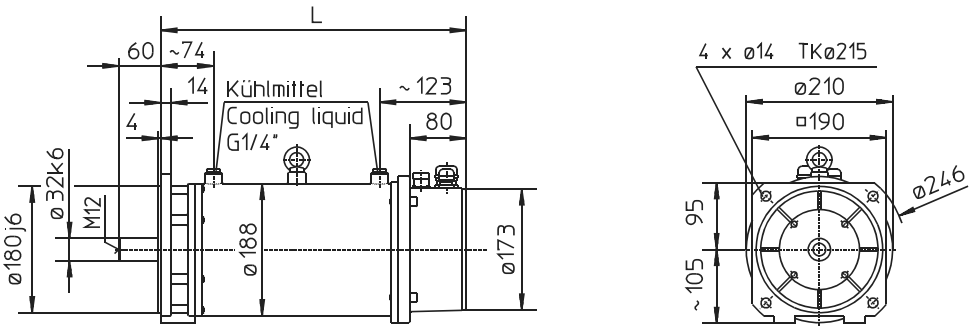
4 Dimensions DW

Dimensions in mm

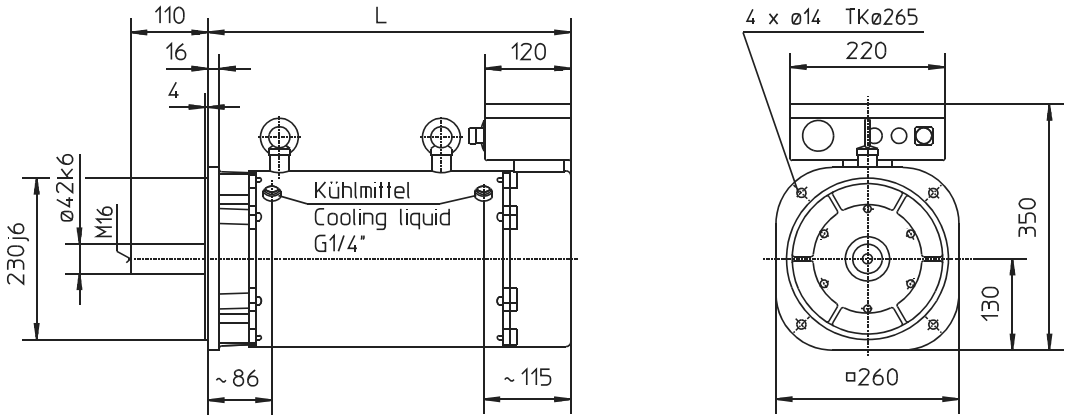
DW 7



DW 10



DW 13



5 Imprint

Title **AMKASYN Motors DW**

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

Part-Number **27869**

History

Date
1999/23
2005/23
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 AMK Arnold Müller Antriebs- und Steuerungstechnik GmbH & Co. KG
Gaußstraße 37 – 39, 73230 Kirchheim/Teck

Tel.: +49 7021/50 05-0, Fax: +49 7021/50 05-176
E-Mail: info@amk-group.com

For further information www.amk-group.com