7 Important information on selection tables and dimension drawings

7.1 Possible geometrical combinations

7.1.1 Structure of the tables

These tables show geometrically possible combinations of single-speed gear units and AC (brake) motors. Please contact SEW-EURODRIVE for information on pole-changing AC (brake) motors.

The following data is provided for each combination and an input speed n_i = 1400 rpm:

- Output speed (n_a)
- Maximum output torque (M_{amax})
- Permitted overhung load (F_{RA}) at maximum output torque, applies to foot-mounted gear units with solid shaft
- Gear unit reduction ratio (i)

Torsion angle $\phi_{(/R)}$: If no value is specified, the gear unit is not available with the "reduced backlash (/R)" option in this gear unit reduction ratio. If a numerical value is given, this gear unit is also available with "reduced backlash (/R)" option. The numerical value specifies the rotational clearance of the reduced backlash version in angular minutes ['].

R77, n_e=1400 1/min **820 Nm**

n_a [1/min]	M_{amax} [Nm]	F_{Ra} [N]	$\varphi_{(/R)}$ [']	i	DR63 DR63M ...	DRS71 DRS80S ...	DRE90L	DRE100M DRE100LC DRE112M	DRE132S	DRE132M DRE132MC DRE160S	DRE160M DRE160MC
				3							
7.2	820	9920	6.4	195.24							
8.4	820	9920	6.5	166.59							

Gear unit reduction ratio

No data (-): The reduced backlash (= /R) option is not possible for this i value.
Numerical value given: The reduced backlash (= /R) option is possible; the numerical value specifies the rotational clearance of the reduced backlash version in angular minutes ['].

Permitted overhung load at maximum output torque (foot-mounted gear unit with solid shaft)

Maximum output torque

Output speed

* Finite gear unit reduction ratio

	Combination with the motor in the header **is possible**.
	Combination with the motor in the header **is not possible**.

Helical gear units (R), with the exception of the single stage RX gear unit, and parallel-shaft helical gear units (F) have two or three stages, depending on the gear unit reduction ratio. The tables indicate whether the subsequent i ranges are two or three stage. Multi-stage gear units always have a helical gear unit as their primary gear unit; it explains why the number of stages is also given for multi-stage gear units.

2 For R and F gear units: Number of stages of the subsequent gear ratios (two or three stages).

For multi-stage gear units: Stages of the following ratios (2-2, 3-3, 2-3 or 3-2 stages).

3 3 The number of stages of the primary gear unit (= small gear unit) is given on the right; the number of stages of the output gear unit (= large gear unit) is given on the left.

Helical-bevel, SPIROPLAN® and helical-worm gear units (K, W and S) have a defined number of stages. This is why the number of stages is not listed in the tables.

- Helical-bevel gear units (K): K..7 always 3-stage, K..9 always 2-stage
- SPIROPLAN® gear units (W): W..10 to W..30 always 1-stage, W..37 and W..47 always 2-stage
- Helical-worm gear units (S): Always 2-stage

7.2 Selection tables for gearmotors

7.2.1 Structure of the selection tables

The two figures below illustrate the structure of the selection tables for gearmotors. There are two types of selection tables:

1. For standard output speeds, sorted by the rated power P_m [kW] of the driving motor.
2. For extremely low output speeds, always multi-stage gearmotors sorted by the maximum permitted output torque $M_{a\ max}$ [Nm].

Table for standard output speeds:

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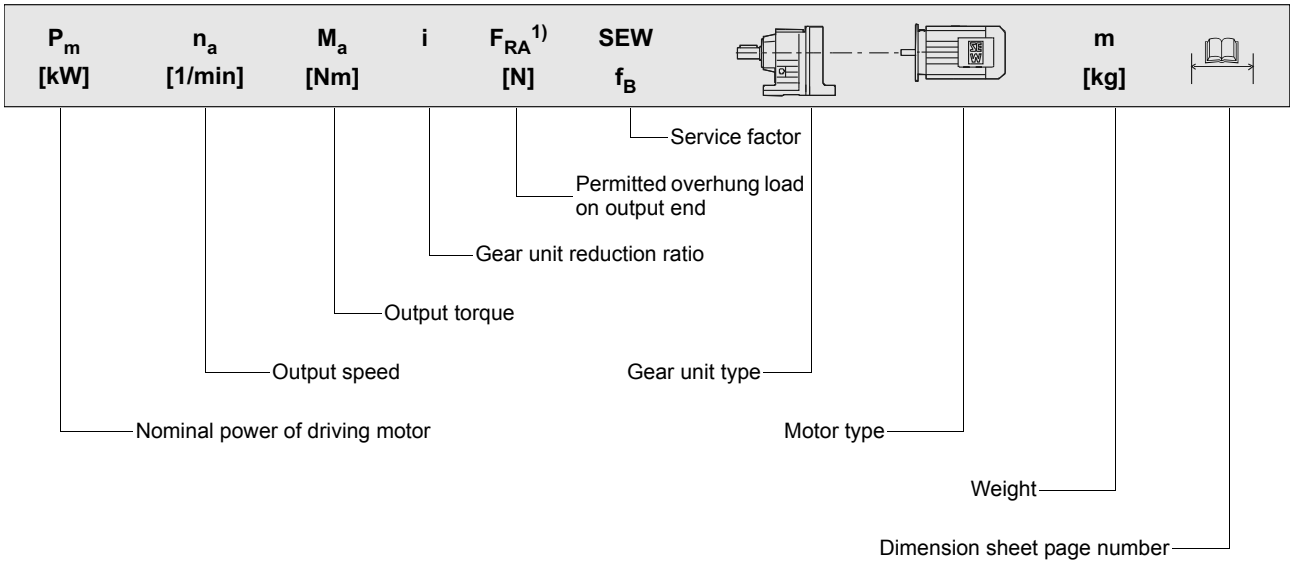

* Finite gear unit reduction ratio

1) Overhung load for foot-mounted gear units with solid shaft; overhung loads for other gear unit types upon request.

INFORMATION

Only applies to SPIROPLAN® (W) gearmotors:

- If a lubricant is used for the food industry (food grade), SEW $f_B \geq 1.2$ required.

Table for extremely low output speeds (multi-stage gearmotors):

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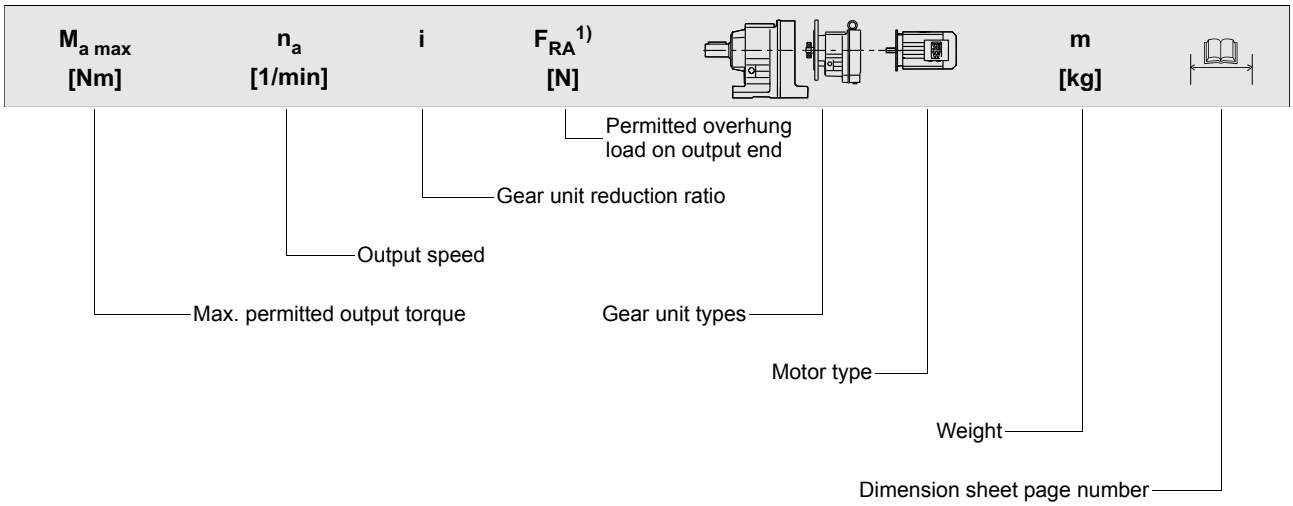


* Finite gear unit reduction ratio

1) Overhung load for foot-mounted gear units with solid shaft; overhung loads for other gear unit types upon request

INFORMATION

In drives for particularly low output speeds (multi-stage gearmotors), the motor power must be limited to the maximum permitted output torque of the gear unit.

7.3 Dimension sheet information

7.3.1 Symbols for scope of delivery

= Standard parts supplied by SEW-EURODRIVE.

= Standard parts not supplied by SEW-EURODRIVE.

7.3.2 Tolerances

Shaft heights

The following tolerances apply to the indicated dimensions:

η	≤ 250 mm	→ -0.5 mm
η	> 250 mm	→ -1 mm

Foot-mounted gear units: Check the mounted motor because it may project below the mounting surface.

Shaft ends

Diameter tolerance:

Ø	≤ 50 mm	→ ISO k6
Ø	> 50 mm	→ ISO m6

Center bores according to DIN 332, shape DR:

Ø	= 7 – 10 mm	→ M3	Ø	> 30 – 38 mm	→ M12
Ø	> 10 – 13 mm	→ M4	Ø	> 38 – 50 mm	→ M16
Ø	> 13 – 16 mm	→ M5	Ø	> 50 – 85 mm	→ M20
Ø	> 16 – 21 mm	→ M6	Ø	> 85 – 130 mm	→ M24
Ø	> 21 – 24 mm	→ M8	Ø	> 130 mm	→ M30
Ø	> 24 – 30 mm	→ M10			

Keys: according to DIN 6885 (domed type)

Hollow shafts

Diameter tolerance:

Ø → ISO H7 measured with plug gauge

Keys: according to DIN 6885 (domed type)

Exception: Key for WA37 with shaft Ø 25 mm according to DIN 6885-3 (low form)

Multiple-spline shafts

D_m = Measuring roller diameter
M_e = Check size

Flanges

Centering shoulder tolerance:

Ø	≤ 230 mm (flange sizes A120 – A300)	→ ISO j6
Ø	> 230 mm (flange sizes A350 A660)	→ ISO h6

Up to 3 different flange dimensions are available for each size of helical gear units, SPIROPLAN® gear units, AC (brake) motors and explosion-proof AC (brake) motors. The respective dimension drawings show the permitted flanges for each size.

7.3.3 Eyebolts, lifting eyes

R07...R27 helical gear units, motors up to DR100 and SPIROPLAN® gearmotors W..10 to W..30 are delivered without special transportation fixtures. All other gear units and motors are equipped with cast-on lifting eyes, screw-on lifting eyes or screw-on eyebolts.

Gear unit / #motor type	Screw-on		Cast-on lifting eyes
	eyebolts	lifting eyes	
R..37-R..57	-	•	-
R..67-R..107	•	-	-
RX57-RX67	-	•	-
RX77-RX107	•	-	-
F..27-F..157	-	-	•
K..19 - K..29	-	•	-
K..37-K..157	-	-	•
K..167-K..187	•	-	-
S..37-S..47	-	•	-
S..57-S..97	-	-	•
W37-W47	-	•	-
≥ DR112	•	-	-

7.3.4 Breather valves

The gear unit dimension drawings always show the screw plugs. The corresponding screw plug is replaced by an activated breather valve at the factory depending on the ordered mounting position M1 – M6. The result may be slightly altered contour dimensions.

7.3.5 Shrink disk connection

Hollow shaft gear unit with shrink disk connection: If required, please request a detailed data sheet on shrink disks, data sheet no. 33 753 nn 95.

7.3.6 Splined hollow shaft

FV.. hollow shaft gear unit sizes 27 to 107, and KV.. sizes 37 to 107 are supplied with splining according to standard 5480.

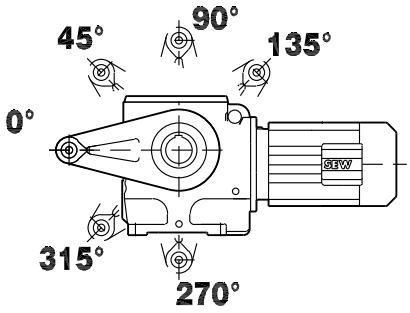
7.3.7 Rubber buffer for FA/FH/FV/FT

Preload rubber buffer by the indicated value mL. The characteristic curve of spring for the rubber buffers is available at SEW-EURODRIVE on request.

7.3.8 Position of the torque arm

Helical-worm and SPIROPLAN® gear units

The following illustration shows the possible torque arm positions for helical-worm gear units and SPIROPLAN® gear units (135° position not possible with SPIROPLAN® gear units) as well as the respective angles:



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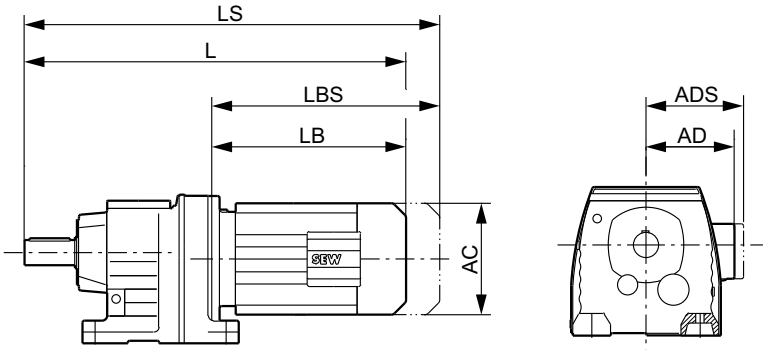
For more information about torque arms, refer to the respective dimension sheets of the gearmotors.

Gearmotor	Dimension sheets from page
Helical-bevel gearmotors	(page 483)
Helical-worm gearmotors	(page 585)
SPIROPLAN® gearmotors	(page 664)

7.3.9 Dimension designations of motors

Following an overview of motor dimension designations:



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L = Total length of the gearmotor
LS = Total length of gearmotor including brake
LB = Length of the motor
LBS = Length of the brakemotor
AC = Diameter of the motor
AD = Distance between the center of the motor shaft and the top part of the terminal box
ADS = Distance between the center of the brakemotor shaft and the top part of the terminal box

7.4 Gearmotor dimensions

7.4.1 Motor options

The motor dimensions can change when installing motor options. Refer to the dimension drawings of the motor options in the "AC Motors" catalog.

7.4.2 Special designs

The terminal box dimensions in special designs might vary from the standard.

7.4.3 EN 50347

European standard EN 50347 became effective in August 2001. This standard adopts the dimension designations for three-phase AC motors for sizes 56 to 315M and flange sizes 65 to 740 from the IEC 72-1 standard.

The new dimension designations given in EN 50347 / IEC 72-1 are used for the dimensions in question in the dimension tables of the dimensions sheets.