



Flat gear type F105

■ Introduction

The flat gear of Heidrive is fitted with ball bearings and therefore allows high axial and radial forces. The gears are filled with synthetic oil, closed and thus maintenance-free. The terminal box is integrated within the case of the gear. With respect to the operating factor the gears have a 1.5 fold overload capacity.

Standard equipment:

- Fully synthetic oil filling
- Screw hole circle on both sides
- Hollow shaft \varnothing 20 mm with feather key
- Protection class: IP54
- Transmission ratios from 47.2 : 1 up to 995.5 : 1
- In case of capacitor motors incl. capacitor integrated in the terminal box
- 4-pole design for operating mode S1 (with respect to the operating factor f_B)
- Permissible ambient temperature: -10° to $+45^\circ$ C

Options:

- Brake, encoder, electronics
- Grease lubrication
- Mounting flange
- Insert shaft left, right or mutual
- Further transmission ratios
- 2-pole design
- Self-ventilation possible

Integrated terminal box



■ Content

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Overview

Capacitor motor

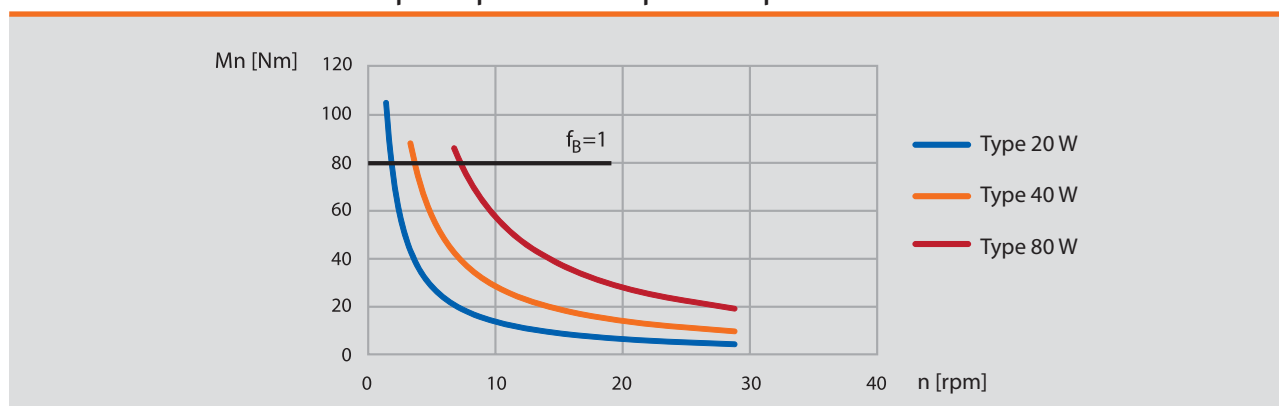
		234.30	234.45	234.75
Supply voltage [V]	U	AC 230V	AC 230V	AC 230V
Frequency [Hz]	F	50 Hz	50 Hz	50 Hz
Output power [W]	P_2	20	40	80
Nominal speed [rpm]	n_N	1,300	1,200	1,200
Nominal torque [Nm]	M_N	15	30	59
Nominal current [A]	I_N	0.26	0.42	0.73
Starting current [A]	I_A	0.44	0.76	1.48
$\cos \varphi_N$		0.98	0.98	0.98
Ratio starting current - nominal current	I_A / I_N	1.69	1.81	2.03
Ratio starting torque - nominal torque	M_A / M_N	1.07	1.08	1.08
Ratio tilting torque - nominal torque	M_K / M_N	1.60	1.63	1.63

Three-phase motor

		263.30	263.45	263.75
Supply voltage [V]	U	AC 3x400V	AC 3x400V	AC 3x400V
Frequency [Hz]	F	50 Hz	50 Hz	50 Hz
Output power [W]	P_2	20	40	80
Nominal speed [rpm]	n_N	1,360	1,360	1,360
Nominal torque [Nm]	M_N	14	28	56
Nominal current [A]	I_N	0.10	0.17	0.28
Starting current [A]	I_A	0.27	0.52	1.00
$\cos \varphi_N$		0.80	0.80	0.80
Ratio starting current - nominal current	I_A / I_N	2.70	3.06	3.57
Ratio starting torque - nominal torque	M_A / M_N	2.36	2.68	2.77

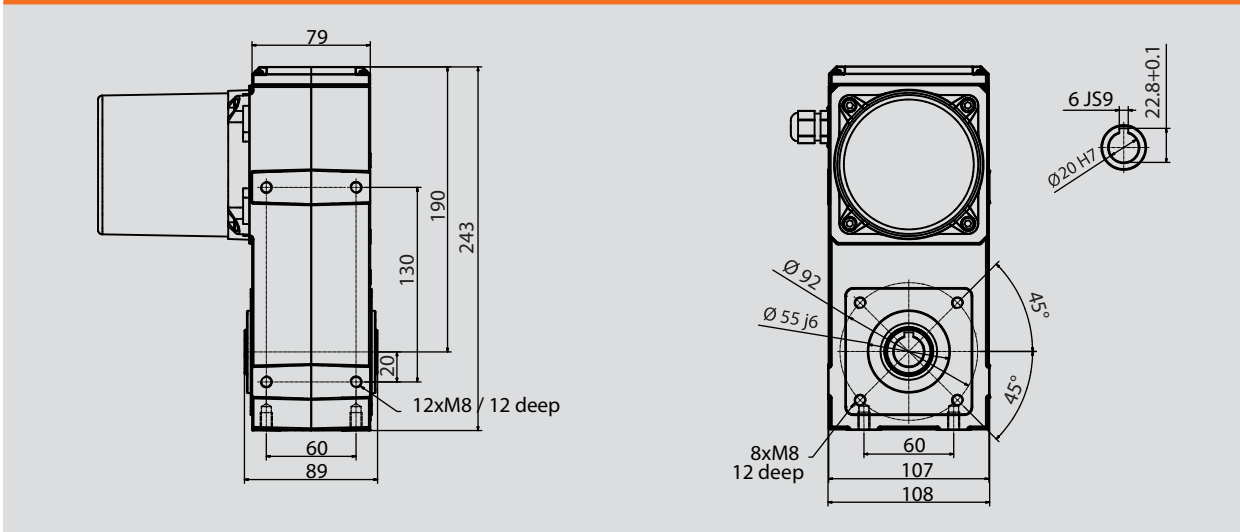
Alternately, the motors can be operated on 230V three-phase supply with the same output power. For that, however, a change of the internal motor switching from delta to star connection is necessary.

Characteristic curve output speed / output torque

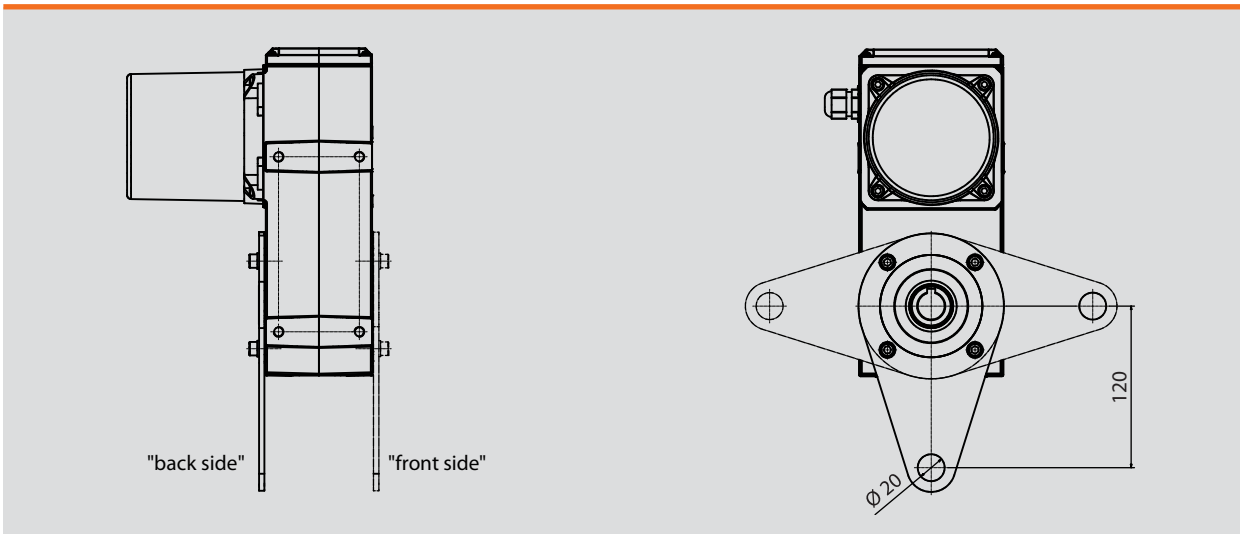


■ Dimensional drawing

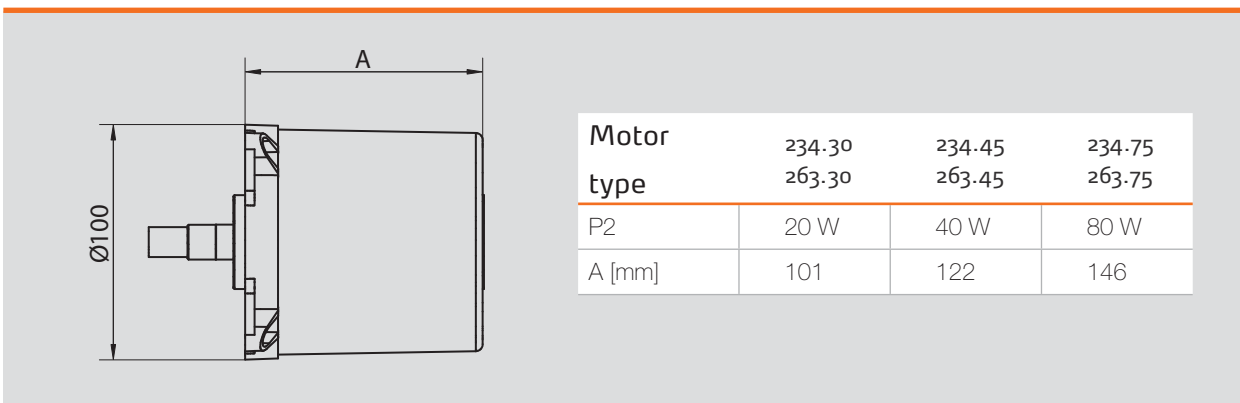
Standard version



With torque support



Motor dimensions



■ Type 263.30

F105 with 20 W three-phase motor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
28.8	5.0	47.2	16.1	2,000	F105-0472-D263-020-230-54-4
22.6	6.3	60.2	12.7	2,000	F105-0602-D263-020-230-54-4
19.2	7.4	70.7	10.8	2,000	F105-0707-D263-020-230-54-4
17.4	8.2	78.2	9.7	2,000	F105-0782-D263-020-230-54-4
16.3	8.8	83.4	9.1	2,000	F105-0834-D263-020-230-54-4
15.1	9.5	90.0	8.5	2,000	F105-0900-D263-020-230-54-4
12.8	11.2	106.2	7.2	2,000	F105-1062-D263-020-230-54-4
11.6	12.3	117.0	6.5	2,000	F105-1170-D263-020-230-54-4
10.9	13.1	124.7	6.1	2,000	F105-1247-D263-020-230-54-4
9.9	14.5	138.0	5.5	2,000	F105-1380-D263-020-230-54-4
8.6	16.5	157.5	4.8	2,000	F105-1575-D263-020-230-54-4
8.1	17.5	167.0	4.6	2,000	F105-1670-D263-020-230-54-4
7.3	19.5	185.8	4.1	2,000	F105-1858-D263-020-230-54-4
6.7	21.5	204.3	3.7	2,000	F105-2043-D263-020-230-54-4
5.7	25.2	239.8	3.2	2,000	F105-2398-D263-020-230-54-4
5.4	26.2	249.8	3.1	2,000	F105-2498-D263-020-230-54-4
4.9	29.2	227.9	2.7	2,000	F105-2279-D263-020-230-54-4
4.6	30.9	294.7	2.6	2,000	F105-2947-D263-020-230-54-4
4.4	32.7	311.8	2.4	2,000	F105-3118-D263-020-230-54-4
3.8	37.9	360.5	2.1	2,000	F105-3605-D263-020-230-54-4
3.2	44.1	419.7	1.8	2,000	F105-4197-D263-020-230-54-4
3.1	46.3	440.7	1.7	2,000	F105-4407-D263-020-230-54-4
2.9	49.0	466.3	1.6	2,000	F105-4663-D263-020-230-54-4
2.5	57.2	544.5	1.4	2,000	F105-5445-D263-020-230-54-4
2.2	65.9	627.8	1.2	2,000	F105-6278-D263-020-230-54-4
2.0	69.9	665.6	1.1	2,000	F105-6656-D263-020-230-54-4
1.7	85.5	814.3	0.9*	2,000	F105-8143-D263-020-230-54-4
1.4	104.5	995.5	0.8*	2,000	F105-9955-D263-020-230-54-4

* not for S1 operation

■ Type 263.45

F105 with 40 W three-phase motor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
28.8	9.9	47.2	8.1	2,000	F105-0472-D263-040-230-54-4
22.6	12.6	60.2	6.3	2,000	F105-0602-D263-040-230-54-4
19.2	14.8	70.7	5.4	2,000	F105-0707-D263-040-230-54-4
17.4	16.4	78.2	4.9	2,000	F105-0782-D263-040-230-54-4
16.3	17.5	83.4	4.6	2,000	F105-0834-D263-040-230-54-4
15.1	18.9	90.0	4.2	2,000	F105-0900-D263-040-230-54-4
12.8	22.3	106.2	3.6	2,000	F105-1062-D263-040-230-54-4
11.6	24.6	117.0	3.3	2,000	F105-1170-D263-040-230-54-4
10.9	26.2	124.7	3.1	2,000	F105-1247-D263-040-230-54-4
9.9	29.0	138.0	2.8	2,000	F105-1380-D263-040-230-54-4
8.6	33.1	157.5	2.4	2,000	F105-1575-D263-040-230-54-4
8.1	35.1	167.0	2.3	2,000	F105-1670-D263-040-230-54-4
7.3	39.0	185.8	2.1	2,000	F105-1858-D263-040-230-54-4
6.7	42.9	204.3	1.9	2,000	F105-2043-D263-040-230-54-4
5.7	50.4	239.8	1.6	2,000	F105-2398-D263-040-230-54-4
5.4	52.5	249.8	1.5	2,000	F105-2498-D263-040-230-54-4
4.9	58.4	227.9	1.4	2,000	F105-2279-D263-040-230-54-4
4.6	61.9	294.7	1.3	2,000	F105-2947-D263-040-230-54-4
4.4	65.5	311.8	1.2	2,000	F105-3118-D263-040-230-54-4
3.8	75.7	360.5	1.1	2,000	F105-3605-D263-040-230-54-4
3.2	88.1	419.7	0.9*	2,000	F105-4197-D263-040-230-54-4

* not for S1 operation

■ Type 263.75

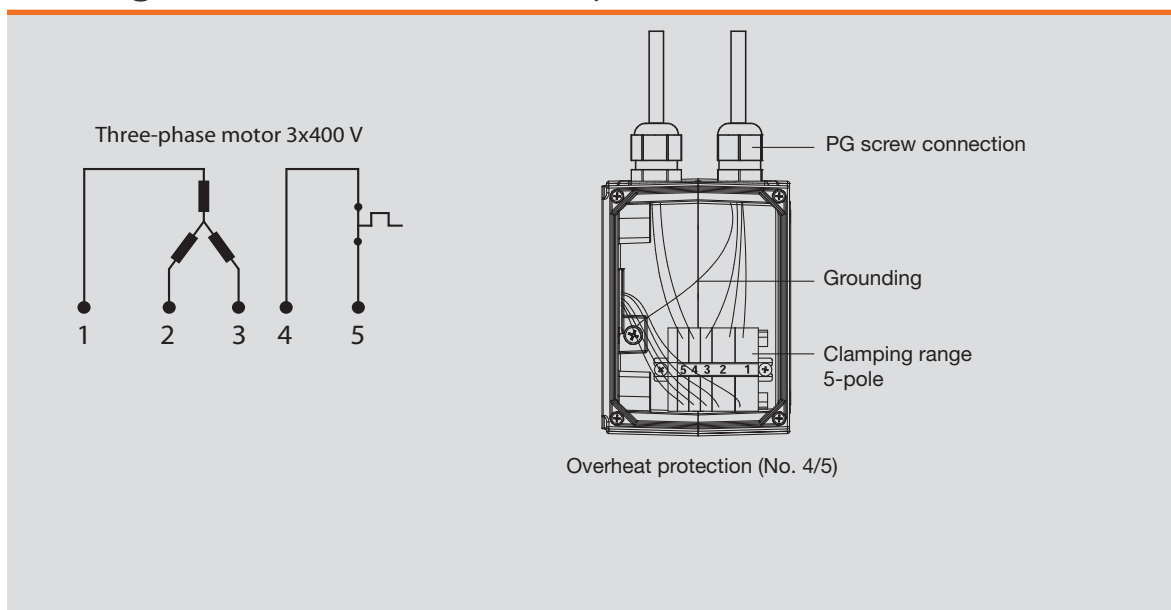
F105 with 80 W three-phase motor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
28.8	19.8	47.2	4.0	2,000	F105-0472-D263-040-230-54-4
22.6	25.3	60.2	3.2	2,000	F105-0602-D263-040-230-54-4
19.2	29.7	70.7	2.7	2,000	F105-0707-D263-040-230-54-4
17.4	32.8	78.2	2.4	2,000	F105-0782-D263-040-230-54-4
16.3	35.0	83.4	2.3	2,000	F105-0834-D263-040-230-54-4
15.1	37.8	90.0	2.1	2,000	F105-0900-D263-040-230-54-4
12.8	44.6	106.2	1.8	2,000	F105-1062-D263-040-230-54-4
11.6	49.1	117.0	1.6	2,000	F105-1170-D263-040-230-54-4
10.9	52.4	124.7	1.5	2,000	F105-1247-D263-040-230-54-4
9.9	58.0	138.0	1.4	2,000	F105-1380-D263-040-230-54-4
8.6	66.2	157.5	1.2	2,000	F105-1575-D263-040-230-54-4
8.1	70.1	167.0	1.1	2,000	F105-1670-D263-040-230-54-4
7.3	78.0	185.8	1.0	2,000	F105-1858-D263-040-230-54-4
6.7	85.8	204.3	0.9*	2,000	F105-2043-D263-040-230-54-4

* not for S1 operation

Drawing of the terminal box (three-phase motor)



■ Type 234.30

F105 with 20 W capacitor motor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
27.5	5.3	47.2	15.1	2,000	F105-0472-K234-020-400-54-4
21.6	6.8	60.2	11.8	2,000	F105-0602-K234-020-400-54-4
18.4	8.0	70.7	10.1	2,000	F105-0707-K234-020-400-54-4
16.6	8.8	78.2	9.1	2,000	F105-0782-K234-020-400-54-4
15.6	9.4	83.4	8.5	2,000	F105-0834-K234-020-400-54-4
14.4	10.1	90.0	7.9	2,000	F105-0900-K234-020-400-54-4
12.2	11.9	106.2	6.7	2,000	F105-1062-K234-020-400-54-4
11.1	13.2	117.0	6.1	2,000	F105-1170-K234-020-400-54-4
10.4	14.0	124.7	5.7	2,000	F105-1247-K234-020-400-54-4
9.4	15.5	138.0	5.2	2,000	F105-1380-K234-020-400-54-4
8.3	17.7	157.5	4.5	2,000	F105-1575-K234-020-400-54-4
7.8	18.8	167.0	4.3	2,000	F105-1670-K234-020-400-54-4
7.0	20.9	185.8	3.8	2,000	F105-1858-K234-020-400-54-4
6.4	23.0	204.3	3.5	2,000	F105-2043-K234-020-400-54-4
5.4	27.0	239.8	3.0	2,000	F105-2398-K234-020-400-54-4
5.2	28.1	249.8	2.8	2,000	F105-2498-K234-020-400-54-4
4.7	31.3	227.9	2.6	2,000	F105-2279-K234-020-400-54-4
4.4	33.2	294.7	2.4	2,000	F105-2947-K234-020-400-54-4
4.2	35.1	311.8	2.3	2,000	F105-3118-K234-020-400-54-4
3.6	40.6	360.5	2.0	2,000	F105-3605-K234-020-400-54-4
3.1	47.2	419.7	1.7	2,000	F105-4197-K234-020-400-54-4
2.9	49.6	440.7	1.6	2,000	F105-4407-K234-020-400-54-4
2.8	52.5	466.3	1.5	2,000	F105-4663-K234-020-400-54-4
2.4	61.3	544.5	1.3	2,000	F105-5445-K234-020-400-54-4
2.1	70.6	627.8	1.1	2,000	F105-6278-K234-020-400-54-4
2.0	74.9	665.6	1.1	2,000	F105-6656-K234-020-400-54-4
1.6	91.6	814.3	0.9*	2,000	F105-8143-K234-020-400-54-4
1.3	112.0	995.5	0.7*	2,000	F105-9955-K234-020-400-54-4

* not for S1 operation

■ Type 234.45

F105 with 40 W capacitor motor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
27.5	10.6	47.2	7.5	2,000	F105-0472-K234-040-400-54-4
21.6	13.5	60.2	5.9	2,000	F105-0602-K234-040-400-54-4
18.4	15.9	70.7	5.0	2,000	F105-0707-K234-040-400-54-4
16.6	17.6	78.2	4.5	2,000	F105-0782-K234-040-400-54-4
15.6	18.8	83.4	4.3	2,000	F105-0834-K234-040-400-54-4
14.4	20.3	90.0	4.0	2,000	F105-0900-K234-040-400-54-4
12.2	23.9	106.2	3.3	2,000	F105-1062-K234-040-400-54-4
11.1	26.3	117.0	3.0	2,000	F105-1170-K234-040-400-54-4
10.4	28.1	124.7	2.9	2,000	F105-1247-K234-040-400-54-4
9.4	31.1	138.0	2.6	2,000	F105-1380-K234-040-400-54-4
8.3	35.4	157.5	2.3	2,000	F105-1575-K234-040-400-54-4
7.8	37.6	167.0	2.1	2,000	F105-1670-K234-040-400-54-4
7.0	41.8	185.8	1.9	2,000	F105-1858-K234-040-400-54-4
6.4	46.0	204.3	1.7	2,000	F105-2043-K234-040-400-54-4
5.4	54.0	239.8	1.5	2,000	F105-2398-K234-040-400-54-4
5.2	56.2	249.8	1.4	2,000	F105-2498-K234-040-400-54-4
4.7	62.5	227.9	1.3	2,000	F105-2279-K234-040-400-54-4
4.4	66.3	294.7	1.2	2,000	F105-2947-K234-040-400-54-4
4.2	70.2	311.8	1.1	2,000	F105-3118-K234-040-400-54-4
3.6	81.1	360.5	1.0	2,000	F105-3605-K234-040-400-54-4
3.1	94.4	419.7	0.8*	2,000	F105-4197-K234-040-400-54-4

* not for S1 operation

■ Type 234.75

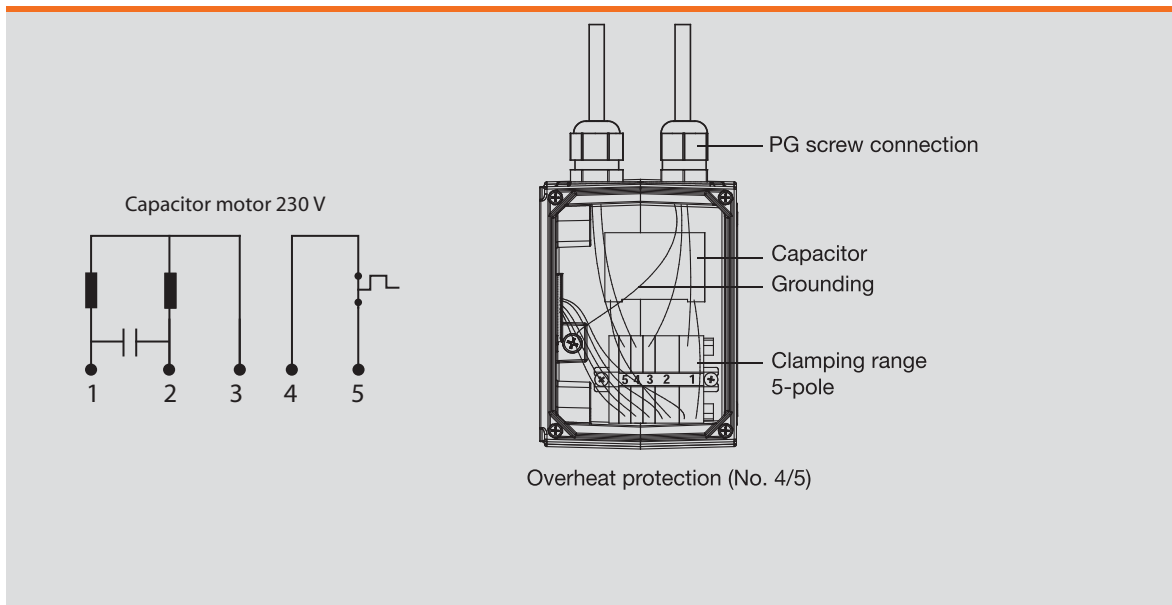
F105 with 80 W capacitor

■ Technical data

Output speed n_N [rpm]	Output torque M_a [Nm]	Transmission ratio i	Operating factor f_B	Radial force F_R [N]	Order number
27.5	20.9	47.2	3.8	2,000	F105-0472-K234-080-400-54-4
21.6	26.6	60.2	3.0	2,000	F105-0602-K234-080-400-54-4
18.4	31.3	70.7	2.6	2,000	F105-0707-K234-080-400-54-4
16.6	34.6	78.2	2.3	2,000	F105-0782-K234-080-400-54-4
15.6	36.9	83.4	2.2	2,000	F105-0834-K234-080-400-54-4
14.4	39.8	90.0	2.0	2,000	F105-0900-K234-080-400-54-4
12.2	47.0	106.2	1.7	2,000	F105-1062-K234-080-400-54-4
11.1	51.8	117.0	1.5	2,000	F105-1170-K234-080-400-54-4
10.4	55.2	124.7	1.4	2,000	F105-1247-K234-080-400-54-4
9.4	61.1	138.0	1.3	2,000	F105-1380-K234-080-400-54-4
8.3	69.7	157.5	1.1	2,000	F105-1575-K234-080-400-54-4
7.8	73.9	167.0	1.1	2,000	F105-1670-K234-080-400-54-4
7.0	82.2	185.8	1.0	2,000	F105-1858-K234-080-400-54-4
6.4	90.4	204.3	0.9*	2,000	F105-2043-K234-080-400-54-4

* not for S1 operation

Drawing of the terminal box (capacitor motor)



Technical data subject to change! Last changes 01/2016



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