Motors | G-motion atex

Motors for Atex category 2G, 2D, 3G (zone 1, 21, 2)

Motors for Atex category 3D (zone 22)

Two pole pairs (4-pole)

Motor frame size	P_r [kW]	n_r [rpm]	I_r Y [A]	I_r Δ [A]	I_A/I_r	U ± 5% Y [V]	U ± 5% Δ [A]	f_r [Hz]	cos φ	η [%]	M_r [Nm]	M_K [Nm]	M_A [Nm]	J_{motor} [10^{-3} kgm²]	m [kg]
063-12	0.12	1380	0.50	0.90	3.4	400	230	50	0.67	50	0.83	1.66	1.66	0.24	3.6
062-32	0.18	1370	0.60	1.10	3.7	400	230	50	0.69	62	1.25	2.50	2.50	0.31	4.2
071-12	0.25	1350	0.80	1.40	3.7	400	230	50	0.69	65	1.77	3.54	3.54	0.61	4.8
071-32	0.37	1350	1.30	2.25	3.6	400	230	50	0.59	68	2.62	5.24	5.24	0.77	5.9
080-12	0.55	1370	1.60	2.75	3.4	400	230	50	0.72	71	3.80	6.84	6.46	1.58	7.8
080-32	0.75	1370	2.10	3.70	4.6	400	230	50	0.74	71	5.20	9.36	9.36	1.90	9.0
090-12	1.1	1405	2.70	4.70	4.7	400	230	50	0.80	73	7.50	18.0	15.0	2.70	16
090-32	1.5	1415	3.70	6.40	5.3	400	230	50	0.77	76	10.1	27.3	25.3	2.80	18
100-12	2.2	1425	5.20	9.00	5.9	400	230	50	0.80	77	14.7	41.2	35.3	7.00	26
100-32	3	1415	6.90	12.0	5.8	400	230	50	0.81	78	20.2	58.6	52.5	8.20	27
112-22	4	1430	8.30	14.4	6.9	400	230	50	0.85	83	26.7	80.1	66.8	14.0	37

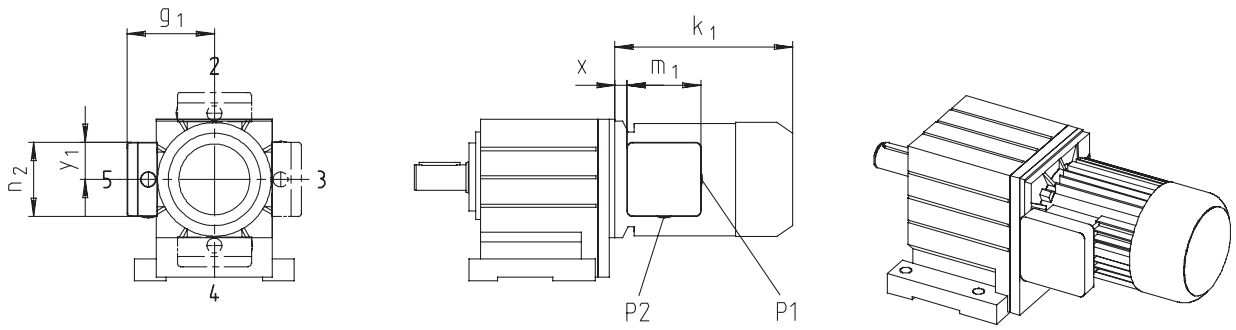
The data values in percentages include the tolerance limits (± 5%) according to EN 60034.

Values are guide values.

Motor terminal boxes

Dimensions and positions of cable entries

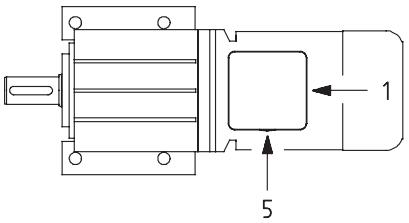
Terminal box positions 2, 3, 4, 5 (example mounting position A)



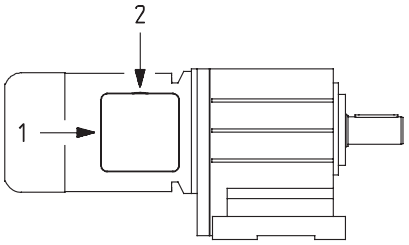
Terminal box	Motor frame size					
	063	**071**	**080**	**090**	**100**	**112**
x	19	15	11	17.5	17.5	38
g_1		125		127		134 128 139 164
m_1	102	102	102	101	101	121
n_2	92	92	92	103	103	146
y_1	46	46	46	51.5	51.5	61
P1	M20x1.5	M20x1.5	M20x1.5			
P2				M20x1.5	M20x1.5	M25x1.5

For dimension **k_1**, see the geared motor dimensions.

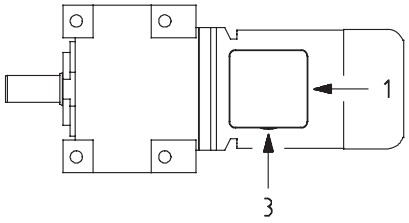
Terminal box position 2
Position of cable entries: 1 (P1) or 5 (P2)



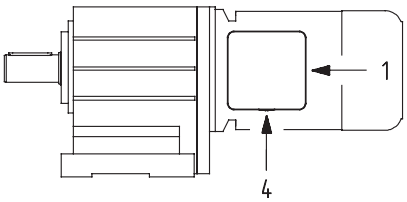
Terminal box position 3
Position of cable entries: 1 (P1) or 2 (P2)

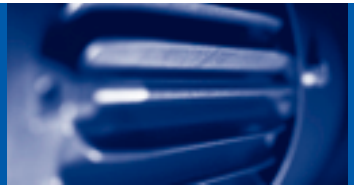


Terminal box position 4
Position of cable entries: 1 (P1) or 3 (P2)



Terminal box position 5
Position of cable entries: 1 (P1) or 4 (P2)





One pole pair (2-pole)

Motor frame size	P_r [kW]	n_r [rpm]	I_r Y [A]	I_r Δ [A]	I_A/I_r	U ± 10% Y [V]	U ± 10% Δ [A]	f_r [Hz]	cos φ	η [%]	M_r [Nm]	M_K [Nm]	M_A [Nm]	J_{motor} [10^{-3} kgm²]	m [kg]
063C11	0.18	2740	0.46	0.80	4.3	400	230	50	0.88	66	0.63	1.50	1.50	0.17	3.9
063C31	0.25	2710	0.60	1.10	3.7	400	230	50	0.89	66	0.90	2.00	1.90	0.17	3.8
071C11	0.37	2720	0.90	1.50	4.4	400	230	50	0.92	69	1.29	2.90	3.10	0.51	6.0
071C31	0.55	2630	1.40	2.40	3.8	400	230	50	0.93	63	2.00	4.20	3.80	0.51	6.5
080C11	0.75	2720	1.80	3.10	4.7	400	230	50	0.89	70	2.65	6.50	5.40	0.97	10
080C31	1.1	2720	2.60	4.50	4.7	400	230	50	0.89	73	3.90	8.50	7.50	0.97	10
090C11	1.5	2710	3.20	5.50	4.5	400	230	50	0.95	75	5.20	10.4	10.1	3.50	17
090C31	2.2	2730	4.80	8.30	3.7	400	230	50	0.90	76	7.60	15.5	16.4	3.50	17
100C31	3	2950	5.90	10.2	7.0	400	230	50	0.90	82	9.90	27.0	19.0	3.26	21
100C41	4	2840	8.30	14.2	6.6	400	230	50	0.91	78	13.6	29.0	24.0	3.26	21
112C31	5.5	2900	-	11.5	6.0	-	400 *	50	0.83	86	18.1	49.0	46.0	5.38	28
112C41	7.5	2890	-	16.5	6.0	-	400 *	50	0.78	87	24.8	77.0	71.0	7.00	35
132C21	9	2890	-	17.0	6.5	-	400 *	50	0.92	88	29.8	72.0	72.0	20.5	68

Two pole pairs (4-pole)

Motor frame size	P_r [kW]	n_r [rpm]	I_r Y [A]	I_r Δ [A]	I_A/I_r	U ± 10% Y [V]	U ± 10% Δ [A]	f_r [Hz]	cos φ	η [%]	M_r [Nm]	M_K [Nm]	M_A [Nm]	J_{motor} [10^{-3} kgm²]	m [kg]
063C12	0.12	1425	0.49	0.85	3.1	400	230	50	0.56	63	0.80	2.64	2.49	0.33	4.1
063C32	0.18	1365	0.58	1.00	2.7	400	230	50	0.70	64	1.26	2.61	2.52	0.33	4.1
063C42	0.25	1370	0.82	1.40	2.9	400	230	50	0.67	66	1.74	4.10	3.83	0.37	4.4
071C32	0.37	1410	0.95	1.60	3.3	400	230	50	0.77	73	2.51	5.81	4.76	1.07	5.8
071C42	0.55	1405	1.40	2.40	3.5	400	230	50	0.77	74	3.74	9.12	7.85	1.28	6.4
080C32	0.75	1410	1.90	3.30	4.6	400	230	50	0.80	74	5.10	12.1	11.0	2.60	11
080C42	1.1	1390	2.80	4.80	4.4	400	230	50	0.80	77	7.50	18.4	16.5	2.60	11
090C32	1.5	1395	3.60	6.30	4.8	400	230	50	0.79	79	10.3	27.1	23.7	3.50	17
100C12	2.2	1440	5.30	9.20	6.0	400	230	50	0.73	84	14.6	44.0	38.0	6.10	24
100C32	3	1430	7.20	12.5	4.6	400	230	50	0.75	83	20.5	50.0	43.0	6.10	24
112C22	4	1450	9.30	16.1	6.2	400	230	50	0.73	86	26.4	95.0	70.0	10.7	31
112C32	5.5	1445	-	12.5	6.1	-	400*	50	0.77	86	36.6	120	95	13.5	38
132C22	7.5	1455	-	17.0	5.9	-	400*	50	0.76	88	49.5	150	100	33.6	66
132C32	9.2	1450	-	19.7	5.1	-	400*	50	0.80	88	61.0	150	100	33.6	66

Three pole pairs (6-pole)

Motor frame size	P_r [kW]	n_r [rpm]	I_r Y [A]	I_r Δ [A]	I_A/I_r	U ± 10% Y [V]	U ± 10% Δ[V]	f_r [Hz]	cos φ	η [%]	M_r [Nm]	M_K [Nm]	M_A [Nm]	J_{motor} [10^{-3} kgm²]	m [kg]
071C13	0.18	930	0.60	1.10	3.9	400	230	50	0.66	69	1.80	5.00	5.00	1.25	6.5
071C33	0.25	930	1.10	1.80	2.8	400	230	50	0.66	68	2.50	6.60	6.60	1.25	6.5
080C13	0.37	950	1.30	2.20	4.0	400	230	50	0.63	69	3.70	10.7	10.1	2.60	11
080C33	0.55	930	1.70	2.90	3.5	400	230	50	0.70	68	5.60	12.8	12.2	2.60	11

The data values in percentages include the tolerance limits (± 10%) according to EN 60034.

* Star/delta start-up possible at 400 V.

Values are guide values

Motor terminal boxes

Assignment of motor terminal box to built-on accessories

Motor terminal box KK3 is used with designs with PTC thermistor thermal detectors or KTY continuous thermal detectors.

Built-on accessories	2-pole motors						
	063C11 063C31	071C11 071C31	080C11 080C31	090C11 090C31	100C31 100C41	112C31 112C41	132C21
	Motor terminal box assignment						
Integral fan	KK1						
Integral fan with							
Brake	KK3						
Brake + centrifugal mass *		KK3					
Centrifugal mass		KK3					
Blower	KK1						
Blower with brake	KK3						

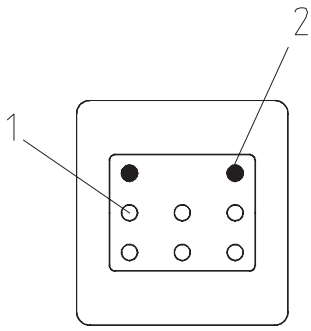
Built-on accessories	4-pole motors						
	063C12 063C32 063C42	071C32 071C42	080C32 080C42	090C32	100C12 100C32	112C22 112C32	132C22 132C32
	6-pole motors						
		071C13 071C33	080C13 080C33				
Integral fan	KK1						
Integral fan with							
Brake	KK3						
Brake + centrifugal mass *		KK3					
Centrifugal mass		KK1	KK1	KK1	KK3	KK1	KK1
Blower	KK1						
Blower with							
Brake	KK3						
Brake + incremental encoder	KK3						
Incremental encoder	KK3						

* Low noise brake

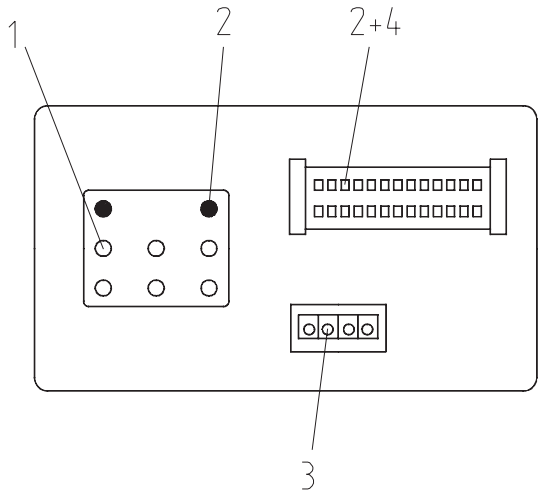
Motor terminal boxes

Position	Designation
1	Motor terminal board
2	Thermal detector connection
3	Rectifier/terminal block (24 V/180 V/205 V DC) for spring-applied brake
4	Terminal strip: thermal detector connection and speed/position encoder

Motor terminal box KK1



Motor terminal box KK3



Motor terminal box assignment plan

Terminal block (Position 3)

Item	Designation	Designation to EN 60034-8
Brake +	1	BD1
Brake -	2	BD2

Rectifier (Position 3)

Item	Designation	Option
Brake	~	**Bridge rectifier/half-wave rectifier** Connection to L1 mains
	~	**Bridge rectifier** Connection to N mains
	~	**Half-wave rectifier** Connection to L2 or L3 mains
	+	Connection to brake
	–	Connection to brake

Terminal strip (position 4)

	Item	Option	Connection cross-section	Designation	Designation to EN 60034-8
1	TCO thermal contact (NC contact)			S1	TB1
2	TCO thermal contact (NC contact)			S2	TB2
1	PTC thermistor			P1	TP1
2	PTC thermistor			P2	TP2
1	Thermal detector KTY +			T1	R1
2	Thermal detector KTY -			T2	R2
3	Incremental encoder supply +	Supply	0.14 mm²	B1	
4	Incremental encoder supply -	GND (ground)	0.14 mm²	B2	
5	Incremental encoder output channel A		0.14 mm²	B3	
6	Incremental encoder output channel A^-	Inverse	0.14 mm²	B4	
7	Incremental encoder output channel B		0.14 mm²	B5	
8	Incremental encoder output channel B^-	Inverse	0.14 mm²	B6	
9	Incremental encoder output channel C	Zero track	0.14 mm²	B7	
10	Incremental encoder output channel C^-	Inverse	0.14 mm²	B8	
11	Shield		0.14 mm²	B10	

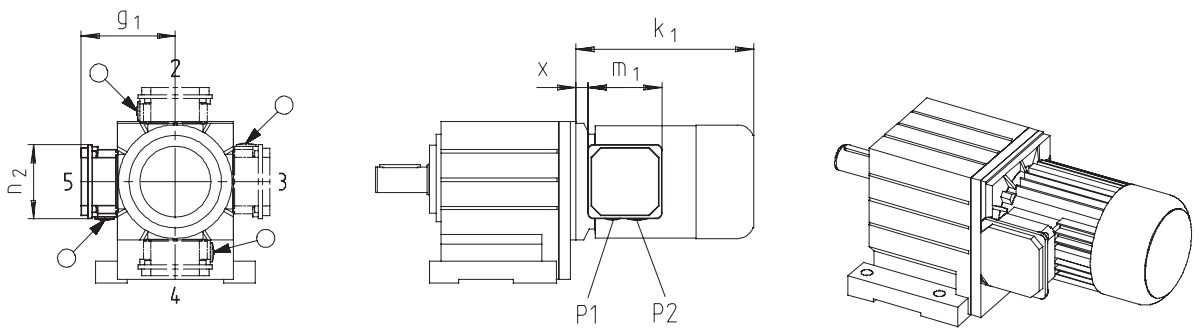
Motor terminal box KK1

Dimensions and positions of cable entries

For motors with motor terminal box KK1, the cable entry position can be selected in accordance with the terminal box position.

Unless the cable entry position is specified, the position will be the one that is circled.

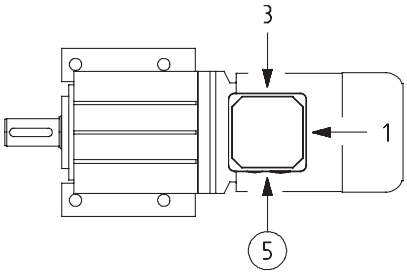
Terminal box positions 2, 3, 4, 5 (example mounting position A)



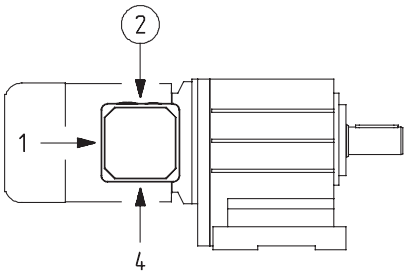
Terminal box	Motor frame size						
KK1	**063**	**071**	**080**	**090**	**100**	**112**	**132**
x	8	11	14	19	20	22	33
g_1	114	123	141	146	157	167	195
m_1	101		115				122
n_2	101		115				122
P1	M20x1.5		M20x1.5				M32x1.5
P2	M20x1.5		M25x1.5				M32x1.5

For dimension **k_1**, see the geared motor dimensions.

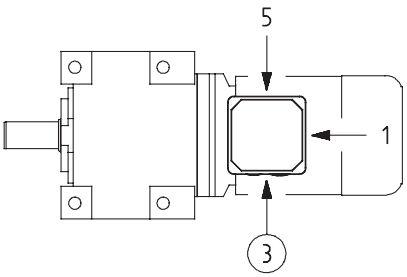
Terminal box position 2
Position of cable entries: 1, 3, 5



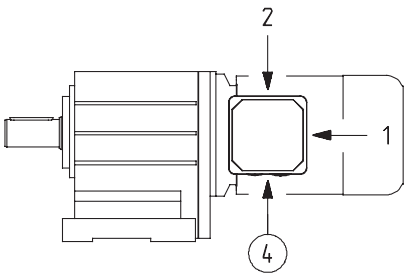
Terminal box position 3
Position of cable entries: 1, 2, 4



Terminal box position 4
Position of cable entries: 1, 3, 5



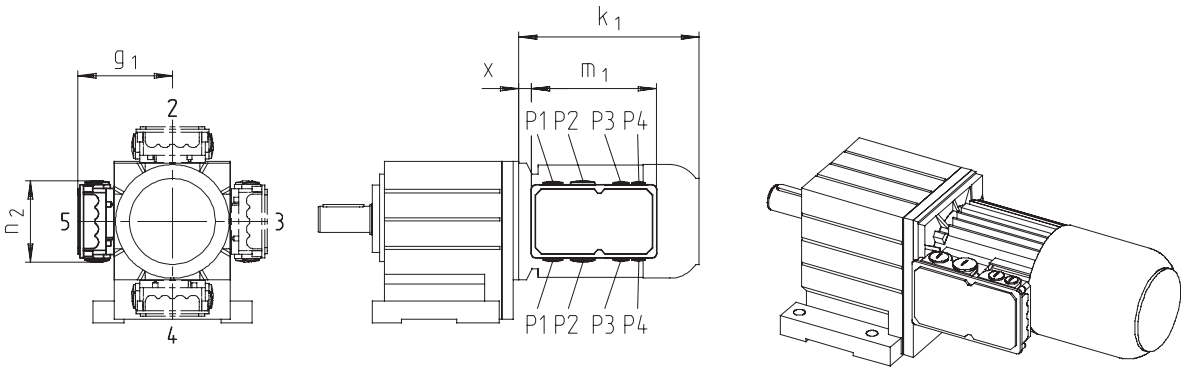
Terminal box position 5
Position of cable entries: 1, 2, 4



Motor terminal box KK3

Dimensions and positions of cable entries

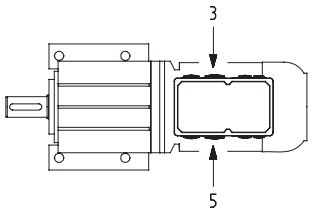
Terminal box positions 2, 3, 4, 5 (example mounting position A)



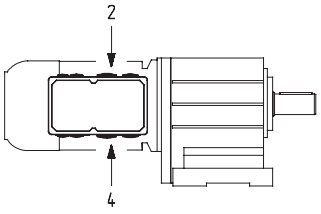
Terminal box	Motor frame size						
KK3	**063**	**071**	**080**	**090**	**100**	**112**	**132**
x	2	5	15	20	21	23	38
g_1	124	133	142	147	158	168	187
m_1	195						
n_2	124						
P1	M25x1.5						
P2	M32x1.5						
P3	M20x1.5						
P4	M16x1.5						

For dimension **k_1**, see the geared motor dimensions.

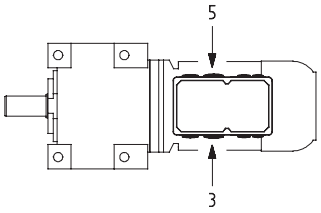
Terminal box position 2
Position of cable entries: 3 + 5



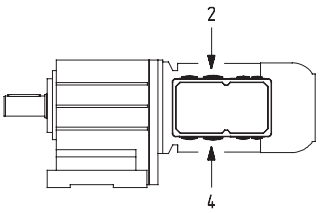
Terminal box position 3
Position of cable entries: 2 + 4



Terminal box position 4
Position of cable entries: 3 + 5



Terminal box position 5
Position of cable entries: 2 + 4



The thermal detectors are integrated in the motor windings. To protect the motor against impermissibly high temperatures and give explosion protection, the TCO thermal contact embedded in the motor winding must be monitored as well as the PTC or KTY thermal detectors.

TKO thermal contacts

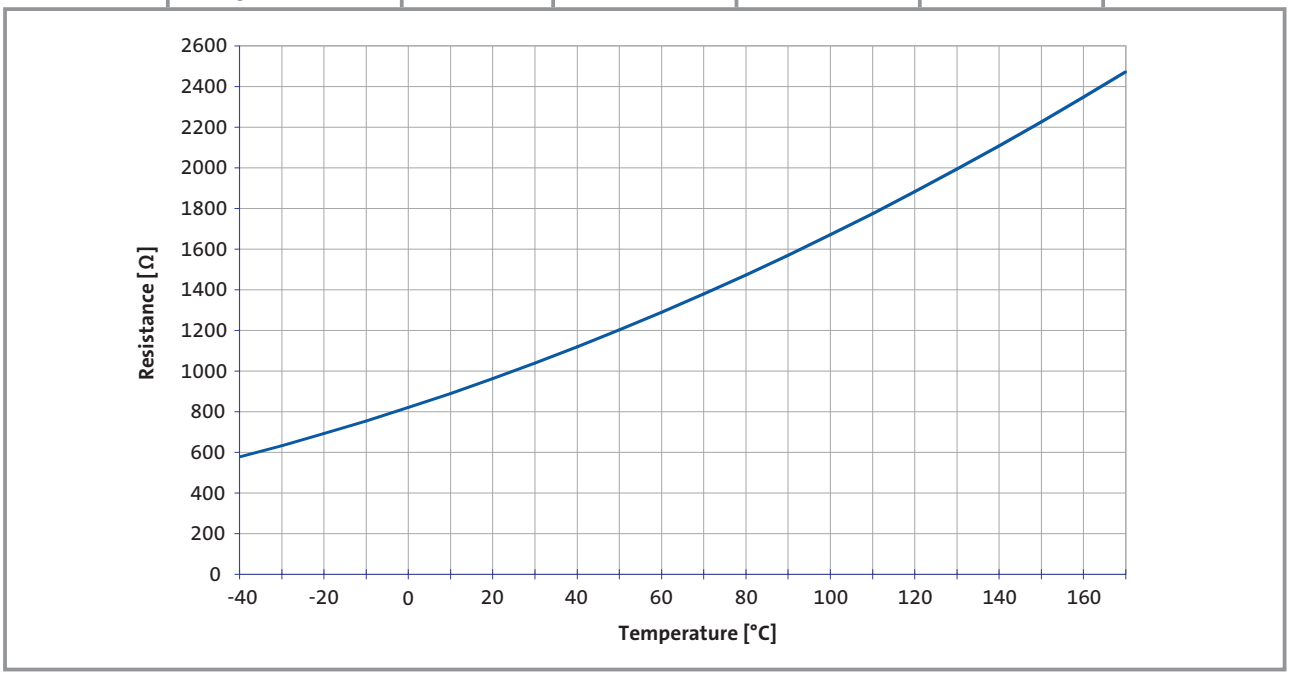
Motor frame size	Function	Operating temperature [°C]	Reset temperature [°C]	Permissible current loading [A]	Permissible voltage loading [V] AC
All	NC contact	150 ± 5	90-135	2.5	250

PTC thermistor

Motor frame size	Function	Operating temperature [°C]	Resistance at 155°C [Ω]	Resistance at -20...+140°C [Ω]	Standards
All	Abrupt change in resistance	150 ± 5	550	30...250	DIN 44080 VDE 0660 Part 303

KTY continuous thermal detector

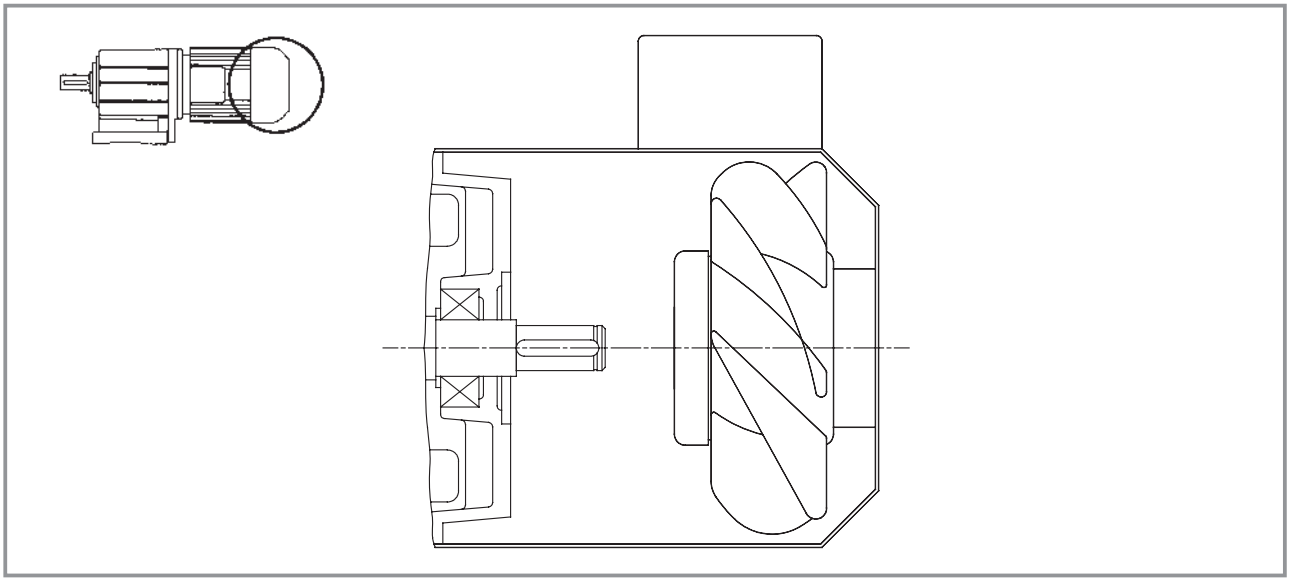
Motor frame size	Function	Resistance at 170°C [Ω]	Resistance at 150°C [Ω]	Resistance at 25°C [Ω]	Permissible current loading at 175°C [mA]	Permissible current loading at 25°C [mA]
All	Continuous change in resistance	2471	2225	1000	2.0	10

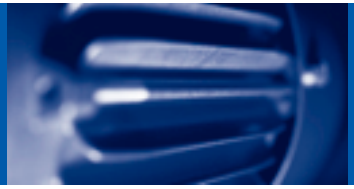


Geared motors and geared brake motors can be fitted with an axial blower. The fan is assembled in an extended motor fan cover with a separate terminal box.

General data

	Motor frame size **063...132**
Design	1~ or 3~
Enclosure	IP66
Temperature class	F
Operating mode	S1





Rated data

Motor frame size	Design	Connection	U_r [V]	f_r [Hz]	I_r [A]	P_r [W]	Weight m [kg]
063	1~		230-277	50 (60)	0.10	27	2
	3~	Y	380-500		0.05	29	
	3~	Δ	220-290		0.10	27	
071	1~		230-277	50 (60)	0.10	28	2.1
	3~	Y	380-500		0.05	30	
	3~	Δ	220-290		0.10	30	
080	1~		230-277	50 (60)	0.11	29	2.3
	3~	Y	380-500		0.05	29	
	3~	Δ	220-290		0.10	29	
090	1~		230-277	50 (60)	0.26	72	2.7
	3~	Y	380-500		0.16	82	
	3~	Δ	220-290		0.28	86	
100	1~		230-277	50 (60)	0.25	70	3
	3~	Y	380-500		0.16	83	
	3~	Δ	220-290		0.27	86	
112	1~		230-277	50 (60)	0.26	73	3.1
	3~	Y	380-500		0.15	82	
	3~	Δ	220-290		0.27	85	
132	1~		230-277	50 (60)	0.39	115	4.2
	3~	Y	380-500		0.24	138	
	3~	Δ	220-290		0.44	130	

Brake motors are fitted with spring-operated brakes.
The rectifier required for mains operation is located in the terminal box and is included in the scope of supply.
The connection between the brake coil and rectifier is factory-configured.

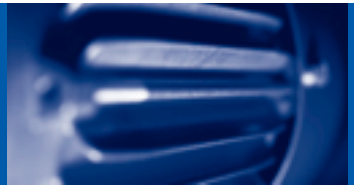
The brakes are active when the supply voltage is switched off (closed-circuit principle).

General data

Design	Single-disc spring-applied brake
Functional principle	Braking torque at zero current
Enclosure	IP55
Temperature class	F
Friction linings	Asbestos-free, with low rate of wear
Option	Low noise (mounting of resolver or incremental encoder mandatory for inverter operation)

Rated data and possible combinations

Rated data		Brake size 06	08	10	12	14	16
$P_{20°}$	[W]	20	25	30	40	50	55
M_B	[Nm]	4	8	16	32	60	80
J_B	[10^{-3} kgm²]	0.015	0.061	0.20	0.45	0.63	1.5
m	[kg]	0.9	1.5	2.6	4.2	5.8	8.7
Motor frame size		**Possible combinations**					
063		●					
071		●					
071C42		●	●				
080			●				
080C42			●	●			
090			●	●			
100				●	●		
100C□1					●		
112					●	●	
132						●	●



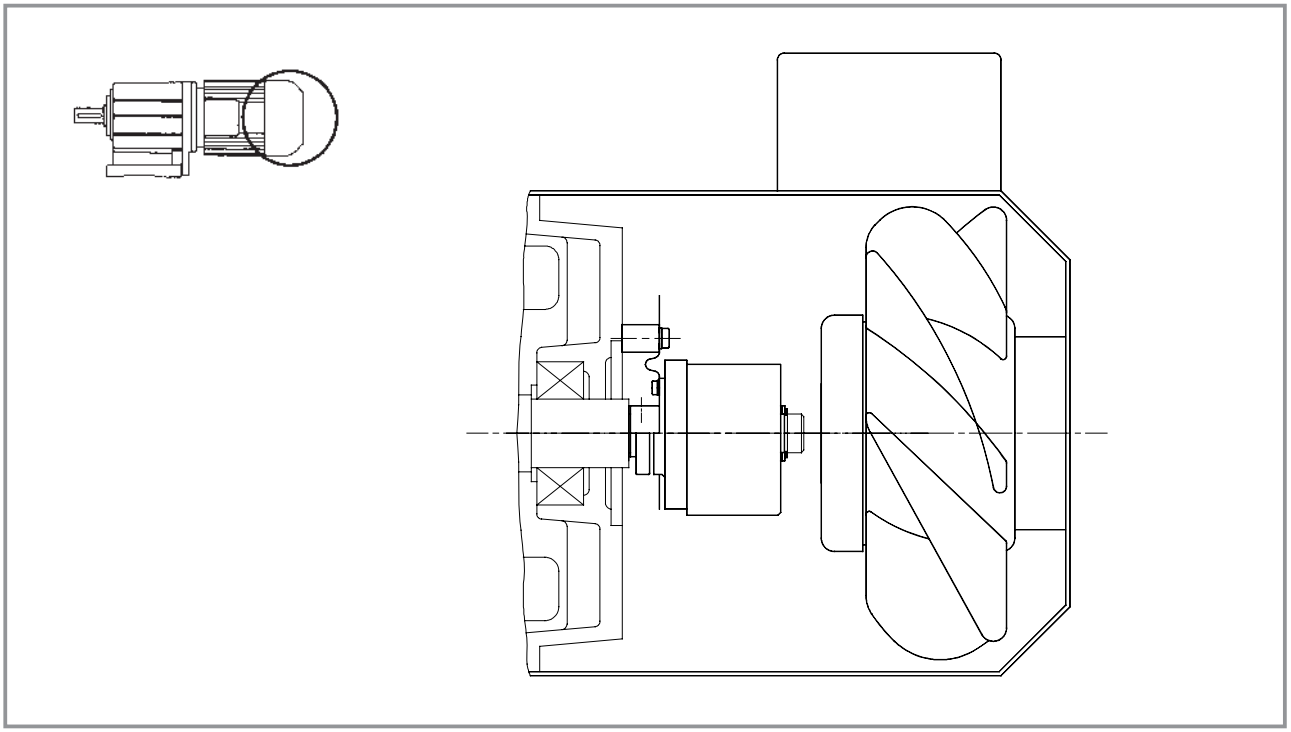
Voltages

Supply voltage	Rectifier	Brake coil voltage	Note
24 V DC	None (terminal strip only)	**24 V DC**	Required to protect against induction voltage peaks: - Freewheeling diode (corresponds to AC switching) - Or external spark suppressor (corresponds to DC switching)
180 V DC		**180 V DC**	
205 V DC		**205 V DC**	
230 V AC	6-pole bridge rectifier (with two additional terminals in DC circuit)	**205 V DC**	- For AC switching (spark suppressor integrated in rectifier to protect the switching contacts at the additional terminals)
400 V AC	6-pole half-wave rectifier (with two additional terminals in DC circuit)	**180 V DC**	
230 V AC	6-pole bridge rectifier (with two additional terminals in DC circuit)	**205 V DC**	- For DC switching (spark suppressor integrated in rectifier to protect the switching contacts at the additional terminals)
400 V AC	6-pole half-wave rectifier (with two additional terminals in DC circuit)	**180 V DC**	

Incremental encoder

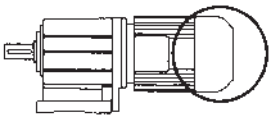
Digital actual value acquisition, can be evaluated directly on the Lenze servo inverter.

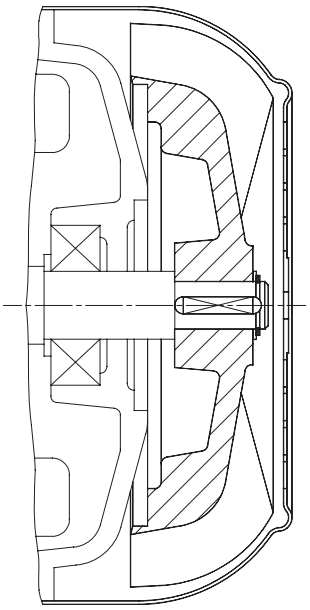
Type	ITD 21 TTL	ITD 21 HTL
Design	Hollow shaft incremental encoder	
Enclosure	IP55	
Voltage level	TTL	HTL
No. of pulses	512/1024/2048 pulses/revolution	
Tracks	2 tracks, 2 inverse tracks and zero pulse	
Supply voltage	5 V DC ± 5%	8 ... 30 V DC
Limit frequency	300 kHz	160 kHz
Working temperature range	-20 ... +70°C	

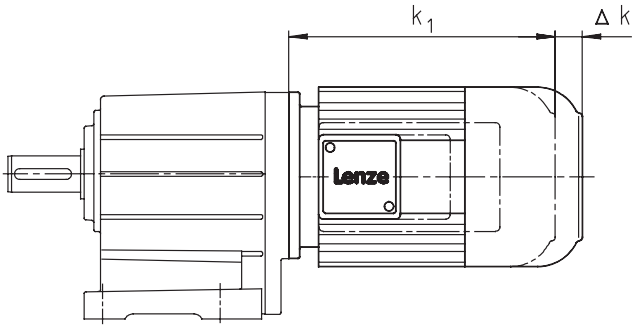


Design	Cast iron integral fan
Functional principle	Increased motor centrifugal mass for smooth starting/braking
Technical note	The increased moment of inertia must be taken into account during project planning! In the event of frequent switching operations, particularly if there is a change of direction of rotation: Please contact us.

Motor frame size	Additional moment of inertia [10^{-3} kgm²]	m [kg]
071	1.8	1.2
080	2.9	1.4
090C□1	8.3	2.8
090C32	5.5	2.0
100	7.7	2.5
112	15.3	3.8
132	35.6	6.0



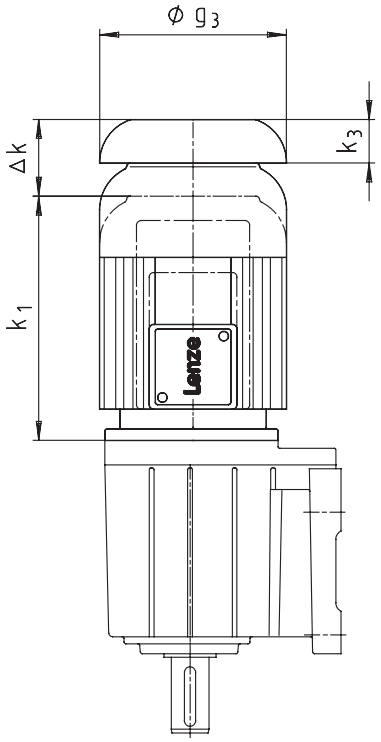




Built-on accessories	2-pole motors						
	063C11 063C31	071C11 071C31	080C11 080C31	090C11 090C31	100C31 100C41	112C31 112C41	132C21
	Δk						
Integral fan	0	0	0	0	0	0	0
Integral fan with							
Brake	40	52	73	70	79	90	109
Brake + centrifugal mass		52	73	70	79	90	109
Centrifugal mass		0	5	0	79	0	0

Built-on accessories	4-pole motors						
	063C12 063C32 063C42	071C32 071C42	080C32 080C42	090C32	100C12 100C32	112C22 112C32	132C22 132C32
	6-pole motors						
		071C33	080C33			071C13	080C13
	Δk						
Integral fan	0	0	0	0	0	0	0
Integral fan with							
Brake	40	52	73	70	79	90	109
Brake + centrifugal mass		52	73	70	79	90	109
Centrifugal mass		0	5	0	79	0	0

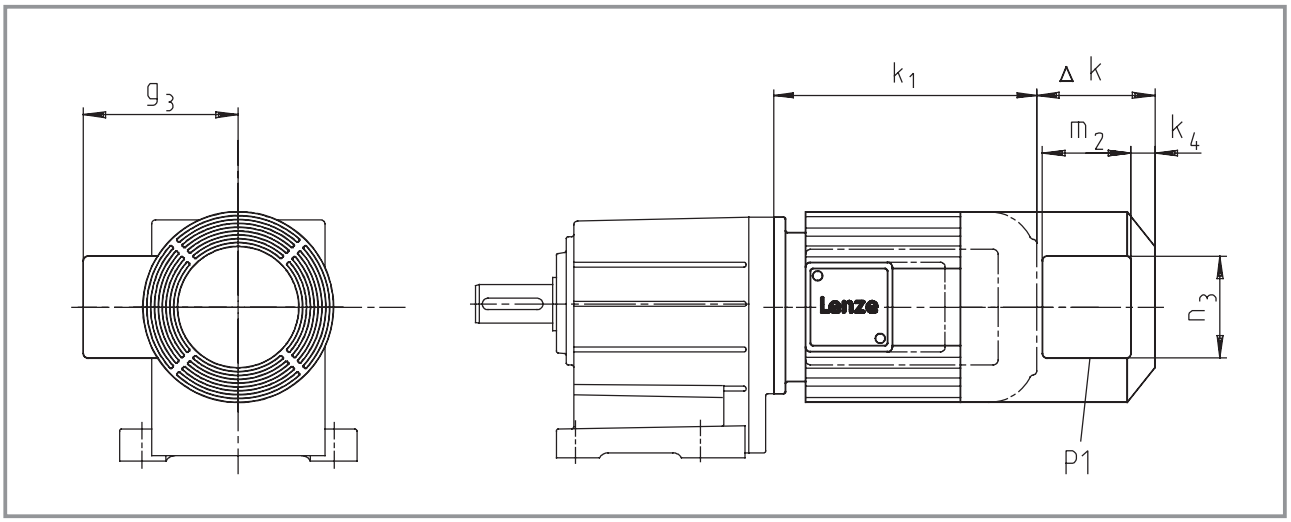
For dimension k_1, see the geared motor dimensions.



Built-on accessories	2-pole motors						
	063C11 063C31	071C11 071C31	080C11 080C31	090C11 090C31	100C31 100C41	112C31 112C41	132C21
	Δk						
Integral fan with protection cover	26	26	26	26	31	31	31
Integral fan with protection cover and							
Brake	65	77	98	96	110	121	140
Brake + centrifugal mass	0	77	98	96	110	121	140
Centrifugal mass	0	26	31	26	110	31	31
	Protection cover						
k_3	11	12	16	15	17	18	20
g_3	123	138	156	176	194	218	257

Built-on accessories	4-pole motors						
	063C12 063C32 063C42	071C32 071C42	080C32 080C42	090C32	100C12 100C32	112C22 112C32	132C22 132C32
	6-pole motors						
		071C13 071C33	080C13 080C33				
	Δk						
Integral fan with protection cover	26	26	26	26	31	31	31
Integral fan with protection cover and							
Brake	65	77	98	96	110	121	140
Brake + centrifugal mass		77	98	96	110	121	140
Centrifugal mass		26	31	26	110	31	31
	Protection cover						
k_3	11	12	16	15	17	18	20
g_3	123	138	156	176	194	218	257

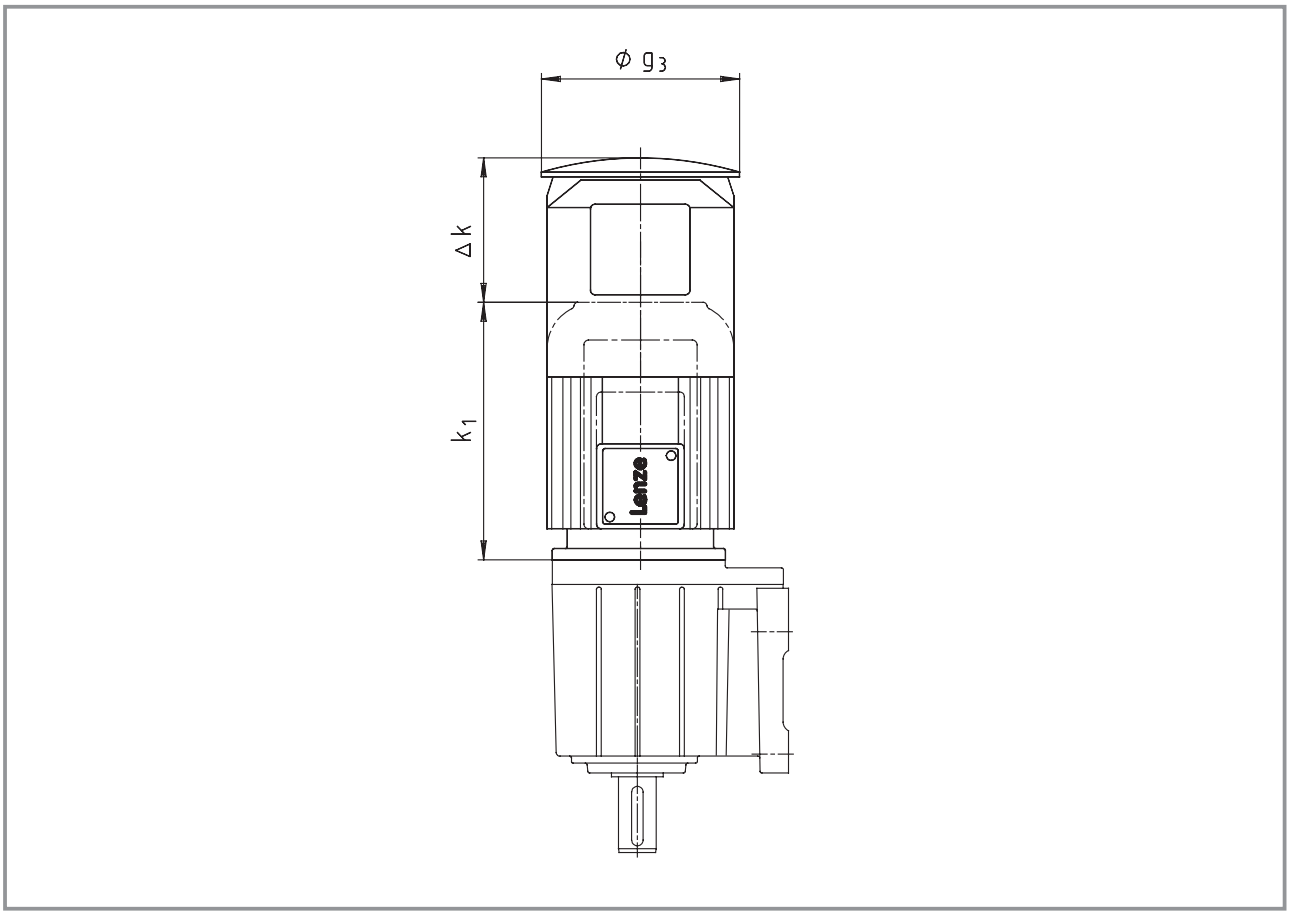
For dimension k_1, see the geared motor dimensions.



Built-on accessories	2-pole motors						
	063C11 063C31	071C11 071C31	080C11 080C31	090C11 090C31	100C31 100C41	112C31 112C41	132C21
	Δk						
Blower	130	128	128	127	109	102	115
Blower with brake	170	165	184	180	170	183	201
	Blower terminal box						
k_4	12	12	12	22	22	22	32
g_3	115	122	131	141	150	162	182
m_2	96						
n_3	106						
P1	1 x M16 x 1.5						

Built-on accessories	4-pole motors						
	063C12 063C32 063C42	071C32 071C42	080C32 080C42	090C32	100C12 100C32	112C22 112C32	132C22 132C32
	6-pole motors						
		071C13 071C33	080C13 080C33				
	Δk						
Blower	130	128	128	127	109	102	115
Blower with							
Brake	170	165	184	180	170	183	201
Brake + incremental encoder	170	165	184	180	170	183	201
Incremental encoder	130	128	128	127	109	183	201
	Blower terminal box						
k_4	12	12	12	22	22	22	32
g_3	115	122	131	141	150	162	182
m_2	96						
n_3	106						
P1	1 x M16 x 1.5						

For dimension k_1, see the geared motor dimensions.
Dimensions in [mm]



Built-on accessories	2-pole motors						
	063C11 063C31	071C11 071C31	080C11 080C31	090C11 090C31	100C31 100C41	112C31 112C41	132C21
	Δk						
Blower with protection cover	169	165	168	157	137	135	140
Blower with protection cover and brake	209	202	224	210	198	216	226
	Protection cover						
g_3	133	150	170	188	210	249	300

Built-on accessories	4-pole motors						
	063C12 063C32 063C42	071C32 071C42	080C32 080C42	090C32	100C12 100C32	112C22 112C32	132C22 132C32
	6-pole motors						
		071C13 071C33	080C13 080C33				
	Δk						
Blower with protection cover	169	165	168	157	137	135	140
Blower with protection cover and Brake	209	202	224	210	198	216	226
Brake + incremental encoder	209	202	224	210	198	216	226
Incremental encoder	169	165	168	157	137	216	226
	Protection cover						
g_3	133	150	170	188	210	249	300

For dimension k_1, see the geared motor dimensions.
Dimensions in [mm]

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