## Voltages

Additional order codes for other voltages or voltage codes (without -Z supplement)

For some non-standard voltages at 50 or 60 Hz, order codes are specified. They are ordered by specifying the code digit **9** for voltage in the 11th position of the Order No. and the appropriate order code.

Special versions

Voltage code identifica11th tion code position with order of the Corder No. Plain text if required

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	Order No.	plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ring motor	s with impro	oved eff															
				1LA									1LA (aluı	5 minur	n)			
Voltage at 50 Hz																		
220 VΔ/380 VY (440 VY at 60 Hz) (210 230 VΔ/360 400 VY); 50 Hz output <sup>1)</sup>	9	L1R		✓	1	1	1	1	1	1	1	✓	1	1	✓			
230 VΔ (220 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E		0	0	0	0	0	0	0	0	0	0	0	0			
380 V∆/660 VY (440 V∆ at 60 Hz) (360 400 V∆/625 695 VY); 50 Hz output <sup>1)</sup>	9	L1L		1	✓	✓	✓	1	<b>√</b>	1	✓	1	1	1	✓			
415 VY (395 435 VY); 50 Hz output <sup>1)</sup>	9	L1C		✓	1	1	1	1	✓	1	1	1	1	1	1			
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		1	1	1	1	✓	1	1	1	1	1	1	1			
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A		0	0	0	0	0	0	0	0	0	0	0	0			
400 VΔ (380, 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B		0	0	0	0	0	0	0	0	0	0	0	0			
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output <sup>1)</sup> ;	9	L1U		0	0	0	0	0	0	0	0	0	0	0	0			
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		1	1	1	1	1	1	1	1	1	1	1	1			
220 VΔ/380 VY; 60 Hz output	9	L2B		1	1	1	1	1	1	1	1	1	1	1	1			
380 V∆/660 VY; 50 Hz output	9	L2C		1	1	1	1	1	1	1	1	1	1	1	1			
380 V∆/660 VY; 60 Hz output	9	L2D		1	1	1	1	1	1	1	1	1	1	1	1			
440 VY; 50 Hz output	9	L2Q		1	1	1	1	1	1	1	1	1	1	1	1			
440 VY; 60 Hz output	9	L2W		1	1	1	1	1	✓	/	1	✓	1	1	✓			
440 VΔ; 50 Hz output	9	L2R		1	✓	1	1	✓	✓	✓	1	✓	1	1	✓			
440 VΔ; 60 Hz output	9	L2X		1	✓	✓	✓	✓	✓	✓	✓	✓	1	✓	✓			
460 VY; 50 Hz output	9	L2S		/	✓	✓	✓	✓	✓	✓	/	✓	1	✓	✓			
460 VY; 60 Hz output	9	L2E		0	0	0	0	0	0	0	0	0	0	0	0			
460 VΔ; 50 Hz output	9	L2T		1	✓	1	✓	✓	✓	1	1	✓	1	✓	✓			
460 VΔ; 60 Hz output	9	L2F		0	0	0	0	0	0	0	0	0	0	0	0			
575 VY; 50 Hz output	9	L2U		1	✓	1	✓	✓	✓	✓	1	✓	1	1	✓			
575 VY; 60 Hz output	9	L2L		1	✓	✓	✓	✓	✓	✓	1	✓	1	1	✓			
575 V∆; 50 Hz output	9	L2V		1	✓	✓	✓	✓	✓	✓	✓	✓	1	✓	✓			
575 V∆; 60 Hz output	9	L2M		/	✓	1	1	✓	✓	✓	/	✓	1	1	✓			
Voltage changeover at 60 Hz																		
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA <sup>3)</sup>	9	L3E		1	<b>√</b>	1	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	1	/	-			
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA <sup>3)</sup>	9	L3F		1	1	1	✓	1	<b>√</b>	1	1	1	1	1	-			
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G		-	-	-	-	-	1	1	1	1	1	1	-			
230 VΔΔ/460 VΔ60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H		-	-	-	-	-	1	1	1	✓	1	1	-			
Non-standard voltages and/or	frequencies	5																
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		1	1	1	1	1	1	1	1	1	1	1	✓			

Special versions	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if	Moto	or type	frame	e size											
		required	56	63	71	80	QΩ	100	112	132	160	180	200	225	250	280	315

Self-ventilated energy-saving motors with improved efficiency in pole-changing version – Aluminum series 1LA7 and 1LA5

Aluminum Series ILAI am	u i	LAJ											
			1LA	7 (alu	ıminu	m)						A5 (alu- num)	
Voltage 60 Hz													
220 V; 50 Hz output	9	L4A	1	1	1	1	1	1	1	1	1	✓	
220 V; 60 Hz output	9	L4B	1	1	✓	✓	1	✓	1	✓	1	1	
380 V; 50 Hz output	9	L4C	1	1	1	1	1	1	1	1	1	1	
380 V; 60 Hz output	9	L4D	1	1	1	1	1	1	1	1	1	1	
440 V; 50 Hz output	9	L4G	1	1	✓	1	1	1	1	1	1	1	
440 V; 60 Hz output	9	L4E	1	1	1	1	1	1	1	1	1	1	
460 V; 50 Hz output	9	L4J	1	1	1	1	1	1	1	1	1	1	
460 V; 60 Hz output	9	L4H	1	1	✓	1	1	1	1	1	1	1	
575 V; 50 Hz output	9	L4N	1	1	1	1	1	1	1	1	1	1	
575 V; 60 Hz output	9	L4M	1	1	1	1	1	1	1	1	1	1	
Non-standard voltage and/or f	req	uencies											
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>2)</sup>		L1Y •	1	1	1	1	✓	1	1	<b>√</b>	1	✓	
Non-standard winding for Y/ $\Delta$ starting at low speed <sup>2)</sup>	9	L3Y •	-	-	-	-	1	✓	1	✓	1	1	

- Without additional charge With additional charge Not possible

- This order code only determines the price of the version Additional plain text is required.

With order codes **L1A**, **L1B**, **L1C**, **L1D**, **L1E**, **L1L**, **L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

When ordered with option brake (order code G26) only 6 motor connection terminals are possible for frame size 56 to 90.

	11th	tion code																
	position of the	with order code and																
	Order No.	plain text if																
		required		56	63	71	80	90		112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motor	rs with hig	h efficien					es 1L	.A9									
				1LA	9 (aluı	minun	1)											
Voltage at 50 Hz	•	Lan			,		,		,				,					
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output 1)	9	L1R		<b>/</b>	<i>y</i>	/	<b>/</b>	•	<i>y</i>	•	<b>/</b>	•	<b>/</b>	1				
230 VΔ (220 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E		0	0	0	0	0	0	0	0	0	0	0				
380 V∆/660 VY (440 V∆ at 60 Hz) (360 400 V∆/625 695 VY); 50 Hz output <sup>1</sup> )	9	L1L		1	1	1	1	1	1	1	1	1	1	1				
415 VY (395 435 VY); 50 Hz output <sup>1)</sup>	9	L1C		1	1	1	1	1	1	1	1	1	1	1				
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		1	1	1	1	1	1	1	1	1	1	1				
400 VY (380, 420 VY); 50 Hz output <sup>1)</sup>	9	L1A		0	0	0	0	0	0	0	0	0	0	0				
400 VΔ (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B		0	0	0	0	0	0	0	0	0	0	0				
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U		0	0	0	0	0	0	0	0	0	0	0				
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		1	✓	✓	1	1	1	✓	✓	✓	✓	✓				
220 VΔ/380 VY; 60 Hz output	9	L2B		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
380 VΔ/660 VY; 50 Hz output	9	L2C		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
380 VΔ/660 VY; 60 Hz output	9	L2D		1	✓	/	1	1	/	/	/	1	/	1				
440 VY; 50 Hz output	9	L2Q		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
440 VY; 60 Hz output	9	L2W		1	1	1	1	1	1	1	1	1	1	1				
440 VΔ; 50 Hz output	9	L2R		1	/	1	1	1	/	1	1	✓	1	1				
440 VΔ; 60 Hz output	9	L2X		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
460 VY; 50 Hz output	9	L2S		1	✓	1	1	1	✓	1	✓	1	✓	1				
460 VY; 60 Hz output	9	L2E		0	0	0	0	0	0	0	0	0	0	0				
460 VΔ; 50 Hz output	9	L2T		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
460 VΔ; 60 Hz output	9	L2F		0	0	0	0	0	0	0	0	0	0	0				
575 VY; 50 Hz output	9	L2U		1	/	1	1	1	/	1	1	✓	1	1				
575 VY; 60 Hz output	9	L2L		1	✓	✓	1	1	✓	1	✓	✓	✓	1				
575 VΔ; 50 Hz output	9	L2V		1	✓	1	1	1	✓	1	✓	✓	✓	1				
575 VΔ; 60 Hz output	9	L2M		1	1	1	1	1	1	1	1	1	1	1				
Voltage changeover at 60 Hz																		
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9	L3E		✓	1	1	✓	1	1	1	1	1	1	1				
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9	L3F		1	1	1	✓	1	1	1	1	1	1	1				
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G		-	-	-	-	-	1	1	1	1	1	1				
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H		-	-	-	-	-	1	1	1	1	1	1				
Non-standard voltage and/or f	requencies																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		✓	1	✓	1	1	1	✓	1	1	1	✓				

Additional identifica-

Voltage code

Special versions	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required		Moto	or type	frame	e size	90	100	110	122	160	180	200	225	250	290	315
Self-ventilated motors wit	h increase		- Aluminu				80	90	100	112	132	160	180	200	225	250	280	315
		- Compan				minun	1)											
Voltage at 50 Hz					·													
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output 1)	9	L1R		✓	✓	1	✓	1	✓	✓	✓	✓	✓	✓				
230 VΔ (220, 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E		0	0	0	0	0	0	0	0	0	0	0				
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 400 VΔ/625 695 VY); 50 Hz output <sup>1</sup> )	9	L1L		1	✓	✓	✓	✓	✓	1	1	1	1	1				
415 VY (395, 435 VY); 50 Hz output <sup>1)</sup>	9	L1C		1	1	1	1	1	1	1	1	1	1	1				
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		1	1	1	1	1	1	1	1	1	1	1				
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A		0	0	0	0	0	0	0	0	0	0	0				
400 VΔ (380, 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B		0	0	0	0	0	0	0	0	0	0	0				
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output 1)	9	L1U		0	0	0	0	0	0	0	0	0	0	0				
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		/	/	/	/	/	/	✓ <u> </u>	/	<b>√</b>	/	<b>√</b>				
220 VA/380 VY; 60 Hz output	9	L2B L2C		1	/	✓ ✓	✓ ✓	✓ ✓	✓ ✓	/	✓ ✓	✓ ✓	✓ ✓	✓ ✓				
380 VΔ/660 VY; 50 Hz output 380 VΔ/660 VY; 60 Hz output	9	L2D		/	✓ ✓	<u> </u>		✓ ✓	<u>/</u>	<u>✓</u>	<u>/</u>	<u> </u>	1	<u> </u>				
440 VY; 50 Hz output	9	L2Q		/	1	1	1	/	<u> </u>	1	1	1	/	1				
440 VY; 60 Hz output	9	L2W		1	1	1	1	1	1	1	1	1	1	1				
440 VΔ; 50 Hz output	9	L2R		1	/	1	/	/	1	1	1	✓	1	✓				
440 VΔ; 60 Hz output	9	L2X		1	✓	✓	✓	✓	1	1	1	✓	1	✓				
460 VY; 50 Hz output	9	L2S		/	/	/	/	/	/	/	/	/	/	/				
460 VY; 60 Hz output	9	L2E		0	0	0	0	0	0	0	0	0	0	0				
460 VΔ; 50 Hz output 460 VΔ; 60 Hz output	9	L2T L2F		✓	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	0	<b>✓</b>	<b>✓</b>	0	<b>✓</b>	<b>✓</b>				
575 VY; 50 Hz output	9	L2U		✓ ✓	<u>✓</u>	✓ ✓	<u>✓</u>	✓ ✓	✓ ✓	<u>✓</u>	<u>✓</u>	✓ ✓	<u>✓</u>	✓ ✓				
575 VY; 60 Hz output	9	L2L		1	1	1	1	1	1	1	1	1	1	1				
575 VΔ; 50 Hz output	9	L2V		1	1	1	1	1	1	1	/	1	1	1				
575 VΔ; 60 Hz output	9	L2M		1	✓	1	✓	1	1	1	1	1	1	1				
Voltage changeover at 60 Hz																		
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9	L3E		/	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 					
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9	L3F		1	✓	<b>√</b>	✓	<b>√</b>	✓	1	1	✓	1	✓				
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G		_	-	-	-	-	1	✓	1	✓	✓	✓				
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H		-	-	-	-	-	1	✓	1	✓	✓	✓				
Non-standard voltage and/or f	requencies																	
	9	L1Y •		1	1	1	1	1	✓	✓	✓	✓	✓	✓				
<ul> <li>Without additional charged</li> <li>With additional charged</li> <li>Not possible</li> <li>This order code only Additional plain text</li> </ul>	ge determin		e of the v	ersic	n –													

<sup>1)</sup> With order codes **L1A**, **L1B**, **L1C**, **L1D**, **L1E**, **L1L**, **L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

	Order No.	plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	
Self-ventilated motors wit	h improve	ed efficienc	y – Cast	iron :	serie	s 1L	A6 a	nd 1l	_G4										
									1LA6	cas	t-iron	1)	1LG	4 (cas	st-iron	1)			
Voltage at 50 Hz																			
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output <sup>1</sup> )	9	L1R							1	✓	✓	1	√	✓	1	✓	✓	1	-
230 VΔ (220, 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E							0	0	0	0	0	0	0	0	0	0	-
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 400 VΔ/625 695 VY); 50 Hz output 1)	9	L1L							✓	✓	✓	1	V	1	1	✓	1	1	1
415 VY (395, 435 VY); 50 Hz output <sup>1)</sup>	9	L1C							✓	1	✓	✓	1	1	1	1	1	✓	-
415 VΔ (395, 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D							✓	✓	✓	✓	1	✓	✓	✓	✓	1	✓
400 VY (380, 420 VY); 50 Hz output <sup>1)</sup>	9	L1A							0	0	0	0	0	0	0	0	0	0	-
400 VΔ (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B							0	0	0	0	0	0	0	0	0	0	0
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U							0	0	0	0	0	0	0	0	0	0	0
Voltage at 60 Hz																			
220 VΔ/380 VY; 50 Hz output	9	L2A							1	/	1	1	1	1	1	1	1	1	-
220 VΔ/380 VY; 60 Hz output	9	L2B							1	/	1	1	1	/	1	1	1	1	-
380 V∆/660 VY; 50 Hz output	9	L2C							1	1	1	1	1	1	1	/	1	1	1
380 VΔ/660 VY; 60 Hz output	9	L2D							1	/	1	1	1	1	1	1	1	1	✓
440 VY; 50 Hz output	9	L2Q							1	/	1	1	1	/	1	✓	1	/	-
440 VY; 60 Hz output	9	L2W							1	/	1	1	1	/	1	✓	1	/	-
440 VΔ; 50 Hz output	9	L2R							1	/	1	1	1	/	1	✓	1	/	✓
440 VΔ; 60 Hz output	9	L2X							1	/	1	1	1	/	/	✓	1	/	✓
460 VY; 50 Hz output	9	L2S							1	/	1	1	1	/	1	✓	1	/	-
460 VY; 60 Hz output	9	L2E							0	0	0	0	0	0	0	0	0	0	-
460 V∆; 50 Hz output	9	L2T							✓	✓	1	1	1	1	✓	✓	1	1	✓
460 VΔ; 60 Hz output	9	L2F							0	0	0	0	0	0	0	0	0	0	0
575 VY; 50 Hz output	9	L2U							1	/	1	1	1	/	1	✓	1	/	-
575 VY; 60 Hz output	9	L2L							✓	✓	✓	✓	1	✓	✓	/	✓	✓	-
575 VΔ; 50 Hz output	9	L2V							1	/	1	1	1	/	1	✓	1	/	✓
575 VΔ; 60 Hz output	9	L2M							0	0	0	0	0	0	0	0	0	0	0
Non-standard voltage and/or f	frequencies	3																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •							✓ ·	✓	1	1	1	1	1	1	1	1	✓

- O Without additional charge
- ✓ With additional charge
- Not possible

Special versions

Voltage

position of the

code 11th Additional

identification code

with order code and

 This order code only determines the price of the version – Additional plain text is required.

With order codes L1A, L1B, L1C, L1D, L1E, L1L, L1R and L1U, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

	11th position of the Order No.	tion code with order code and plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	
Self-ventilated motors wit	h increas	ed output -	- Cast-irc	n se	ries 1	ILG4													
													1LG	4 (cas	st-iror	1)			
Voltage at 50 Hz																			
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output <sup>1)</sup>	9	L1R											✓	1	1	1	1		
230 VΔ (220; 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E											0	0	0	0	0		
380 V∆/660 VY (440 V∆ at 60 Hz) (360 400 V∆/625 695 VY); 50 Hz output <sup>1</sup> )	9	L1L											✓	✓	✓	✓	1		
415 VY (395 435 VY); 50 Hz output <sup>1)</sup>	9	L1C											1	1	1	1	1		
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D											1	1	1	✓	1		
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A											0	0	0	0	0		
400 VΔ (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B											0	0	0	0	0		
400 V∆ (460 V∆ at 60 Hz) (380 420 V∆); 50 Hz output <sup>1</sup>	9	L1U											0	0	0	0	0		
Voltage at 60 Hz																			
220 VΔ/380 VY; 50 Hz output	9	L2A											1	1	1	1	✓		
220 VΔ/380 VY; 60 Hz output	9	L2B											1	✓	✓	✓	✓		
380 V∆/660 VY; 50 Hz output	9	L2C											1	✓	✓	✓	1		
380 V∆/660 VY; 60 Hz output	9	L2D											1	✓	✓	✓	/		
440 VY; 50 Hz output	9	L2Q											1	✓	1	✓	✓		
440 VY; 60 Hz output	9	L2W											1	✓	1	✓	/		
440 VΔ; 50 Hz output	9	L2R											1	✓	✓	✓	✓		
440 VΔ; 60 Hz output	9	L2X											1	✓	✓	✓	✓		
460 VY; 50 Hz output	9	L2S											1	✓	✓	✓	✓		
460 VY; 60 Hz output	9	L2E											0	0	0	0	0		
460 V∆; 50 Hz output	9	L2T											1	✓	✓	✓	✓		
460 V∆; 60 Hz output	9	L2F											0	0	0	0	0		
575 VY; 50 Hz output	9	L2U											/	✓	✓	✓	/		
575 VY; 60 Hz output	9	L2L											1	✓	✓	✓	✓		
575 V∆; 50 Hz output	9	L2V											/	/	/	/	/		
575 V∆; 60 Hz output	9	L2M											0	0	0	0	0		
Non-standard voltage and/or f																			
Non-standard winding for voltages between 200 and 690 V (other voltages are available on request) 2)	9	L1Y											1	1	1	1	/		

Special versions

Voltage code 11th

Additional identifica-

tion code with order

Without additional charge With additional charge Not possible

<sup>1)</sup> With order codes **L1A**, **L1B**, **L1C**, **L1D**, **L1E**, **L1L**, **L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

	11th position of the Order No.	required		56	63	71	80	90		112	132	160	180	200	225	250	280	315 S/M	
Self-ventilated energy-sav	ing moto	rs with hig	h efficier	ıcy –	Cast	-iron	seri	es 1L	_G6										
													1LG	6 (cas	st-iror	1)			
Voltage at 50 Hz	•	140											,	,	,	,	,	,	
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output <sup>1</sup> )	9	L1R											•	<i>,</i>	•	•	•	<b>,</b>	_
230 VΔ (220, 240 VΔ); 50 Hz output 1)	9	L1E											0	0	0	0	0	0	-
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 400 VΔ/625 695 VY); 50 Hz output <sup>1</sup>	9	L1L											✓	1	1	✓	✓	✓	1
415 VY (395, 435 VY); 50 Hz output <sup>1)</sup>	9	L1C											1	1	1	1	1	1	-
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D											✓	✓	1	✓	✓	1	1
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A											0	0	0	0	0	0	-
400 VΔ (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B											0	0	0	0	0	0	0
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U											0	0	0	0	0	0	0
Voltage at 60 Hz																			
220 VΔ/380 VY; 50 Hz output	9	L2A											✓	1	✓	✓	1	✓	-
220 VΔ/380 VY; 60 Hz output	9	L2B											✓	1	1	✓	✓	1	-
380 V∆/660 VY; 50 Hz output	9	L2C											✓	✓	1	✓	✓	1	✓
380 VΔ/660 VY; 60 Hz output	9	L2D											✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q											✓	✓	✓	✓	✓	✓	-
440 VY; 60 Hz output	9	L2W											✓	✓	✓	✓	✓	✓	-
440 V∆; 50 Hz output	9	L2R											✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X											✓	✓	/	✓	✓	✓	/
460 VY; 50 Hz output	9	L2S											✓	✓	✓	✓	✓	✓	-
460 VY; 60 Hz output	9	L2E											0	0	0	0	0	0	-
460 V∆; 50 Hz output	9	L2T											✓	✓	✓	✓	✓	✓	✓
460 V∆; 60 Hz output	9	L2F											0	0	0	0	0	0	0
575 VY; 50 Hz output	9	L2U											✓	✓	✓	✓	✓	1	-
575 VY; 60 Hz output	9	L2L											✓	✓	✓	✓	✓	1	-
575 V∆; 50 Hz output	9	L2V											✓	✓	✓	✓	✓	1	✓
575 V∆; 60 Hz output	9	L2M											0	0	0	0	0	0	0
Non-standard voltage and/or f																			
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) 2)	9	L1Y											1	1	1	1	1	/	<b>√</b>

Not possible

Voltage code 11th

Additional identifica-

tion code

Without additional charge With additional charge

With order codes L1A, L1B, L1C, L1D, L1E, L1L, L1R and L1U, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions

Voltage code identification code position of the Order No.

Order No.

Voltage code identification code with order code and oplain text if required

Notor type frame size

Motor type frame size

identification code

Notor type frame size

identification code

with order code and oplain text if required

56 63 71 80 90 100 112 132 160 180 200 225 250 280 315 315

	Order No.	plain text if required		56 63	3 71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	
Self-cooled motors withou	ut externa	l fan – Aluı	minum se	ries 1L	.P7 ar	nd 1L	P5											
				11	LP7 (a	lumin	um)					1LP: min	5 (alu- um)					
Voltage at 50 Hz																		
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output <sup>1</sup> )	9	L1R		✓	1	✓	✓	✓	1	1	✓	V	✓					
230 VΔ (220, 240 VΔ); 50 Hz output 1)	9	L1E		0	0	0	0	0	0	0	0	0	0					
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 400 VΔ/625 695 VY); 50 Hz output 1	9	L1L		<b>√</b>	<b>√</b>	✓	✓	✓	1	1	1	1	1					
415 VY (395, 435 VY); 50 Hz output <sup>1)</sup>	9	L1C		✓	<b>/</b>	✓	1	✓	✓	✓	✓	✓	✓					
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		✓	<b>✓</b>	✓	✓	✓	✓	1	✓	✓	1					
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A		0		0	0	0	0	0	0	0	0					
400 VΔ (380, 420 VΔ); 50 Hz output 1)	9	L1B		0		0	0	0	0	0	0	0	0					
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output 1	9	L1U		0	) 0	0	0	0	0	0	0	0	0					
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		<b>✓</b>	<b>✓</b>				<b>√</b>	<b>√</b>		1	<b>√</b>					
220 VΔ/380 VY; 60 Hz output	9	L2B		<b>√</b>		_/	_/		<u>/</u>	<u>/</u>	<u>/</u>	/	<u>/</u>					
380 VΔ/660 VY; 50 Hz output	9	L2C		<b>√</b>		<b>√</b>	<u>/</u>	<u>/</u>	<u>/</u>	/	<u>/</u>	/	/					
380 VΔ/660 VY; 60 Hz output	9	L2D		<b>√</b>		<b>√</b>	<u>/</u>	<b>√</b>	/	<u>/</u>	✓ <u> </u>	/	/					
440 VY; 50 Hz output	9	L2Q		<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>	/	✓ <u> </u>	✓ <u> </u>	/	/					
440 VY; 60 Hz output	9	L2W L2R		√ ✓		<u>√</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>✓</u>	1	✓ ✓					
440 VΔ; 50 Hz output 440 VΔ; 60 Hz output	9	L2N		✓ ✓					1	1	1	1	1					
460 VY; 50 Hz output	9	L2S		<b>√</b>			<u>√</u>	<u>✓</u>	<u> </u>	<u> </u>	<u> </u>	1	1					
460 VY; 60 Hz output	9	L25		0		0	0	0	0	0	0	0	0					
460 VΔ; 50 Hz output	9	L2T		✓ ✓		<u>√</u>	<u>√</u>	<u>✓</u>	✓ ✓	<u>✓</u>	<u>✓</u>	1	✓ ✓					
460 VΔ; 60 Hz output	9	L2F		0		0	0	0	0	0	0	0	0					
575 VY; 50 Hz output	9	L2U		1					<del></del>		<u> </u>	1	<u> </u>					
575 VY; 60 Hz output	9	L2L		1		/	/	1	/	1	1	1	/					
575 VΔ; 50 Hz output	9	L2V		1	1	1	1	1	1	1	1	1	1					
575 V∆; 60 Hz output	9	L2M		1	1	1	1	1	1	1	1	1	1					
Voltage changeover at 60 Hz																		
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9	L3E		1	<b>✓</b>	1	1	1	1	1	1	1	1					
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9	L3F		1	1	1	1	1	1	1	1	1	1					
230 VAA/460 VA 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G		0	0	0	0	1	1	1	1	1	1					
230 VAA/460 VA 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H		0	0	0	0	1	1	✓	1	V	1					
Non-standard voltage and/or f	requencies																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		1	1	1	1	1	1	1	1	V	1					

	11th position of the Order No.	tion code with order code and plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L
Self-cooled motors withou	ut externa	l fan – Cas	t-iron se	ries 1	ILP4														
													1LP4	4 (cas	t-iron	1)			
Voltage at 50 Hz		Lab											,	,	,	,		,	
220 VA/380 VY (440 VY at 60 Hz) (210 230 VA/360 400 VY); 50 Hz output 1)	9	L1R											<b>/</b>	•	•	<b>/</b>	<i>y</i>	✓ 	<b>/</b>
230 VΔ (220, 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E											0	0	0	0	0	0	-
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 400 VΔ/625 695 VY); 50 Hz output <sup>1</sup>	9	L1L											✓	1	1	1	1	1	1
415 VY (395 435 VY); 50 Hz output <sup>1)</sup>	9	L1C											1	1	1	1	1	1	1
415 VΔ (395 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D											1	✓	✓	✓	1	1	1
400 VY (380 420 VY); 50 Hz output <sup>1)</sup>	9	L1A											0	0	0	0	0	0	0
400 VΔ (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B											0	0	0	0	0	0	0
400 VΔ (460 VΔ at 60 Hz) (380 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U											0	0	0	0	0	0	0
Voltage at 60 Hz																			
220 VΔ/380 VY; 50 Hz output	9	L2A											1	✓	✓	✓	1	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B											✓	✓	✓	✓	✓	✓	✓
380 V∆/660 VY; 50 Hz output	9	L2C											✓	✓	✓	✓	✓	✓	/
380 VΔ/660 VY; 60 Hz output	9	L2D											✓	✓	✓	✓	✓	✓	/
440 VY; 50 Hz output	9	L2Q											1	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W											1	✓	✓	✓	✓	✓	✓
440 V∆; 50 Hz output	9	L2R											1	✓	✓	✓	✓	✓	✓
440 V∆; 60 Hz output	9	L2X											✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S											/	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E											0	0	0	0	0	0	✓
460 VΔ; 50 Hz output	9	L2T											1	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F											0	0	0	0	0	0	0
575 VY; 50 Hz output	9	L2U											1	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L											1	✓	✓	✓	✓	✓	✓
575 V∆; 50 Hz output	9	L2V											1	1	1	1	✓	✓	1
575 V∆; 60 Hz output	9	L2M											0	0	0	0	0	0	0
Non-standard voltage and/or f	frequencies																		
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) 2)	9	L1Y •											1	1	1	1	1	✓	1

Without additional charge With additional charge

Not possible

Special versions

Voltage code 11th

Additional identifica-

tion code with order

This order code only determines the price of the version – Additional plain text is required.

 $<sup>^{1)}</sup>$  With order codes **L1A**, **L1B**, **L1C**, **L1D**, **L1E**, **L1L**, **L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

## Types of construction

Additional order codes for other types of construction or type of construction codes (without **-Z** supplement)

Order codes have been defined for some special types of construction. They are ordered by specifying the code digit **9** for the type of construction in the 12th position of the Order No. and the appropriate order code.

Special versions	Type of construc- tion code 12th position of the Order No.	Additional identification code with order code and plain text if required		Moto	or type	e frame		90	100	110	100	100	100	200	005	050	200	015
Self-ventilated energy-say		<u>'</u>	royed c			71	80			112			180	200	225	250	280	315
Sell-verithated energy-sat	ing moto	15 WILLI IIIIP	noveu e			minur		IIII SC	iles i	LAI	and i	LAJ	11 A	5 (alum	inum)			
Without flange				ILA	/ (alu	minu	'',						ILA.	) (aluli	iiiiuiiij			
- 1	9	M1F		_	./	./	./	./	./	./	./	./	./	./	1			
With flange	J	Will			•	•	•	•	•	•	•	•	•	•	•			
IM V3 <sup>2)</sup>	9	M1G		_	_	_	_	_	_	_	_	_	1	1	/			
With standard flange															·			
IM V18 with protective cover 1)	9	M2A		_	1	1	1	1	1	1	1	1	-	_	_			
With special flange																		
IM V18 with protective cover 1)	9	M2B		_	1	1	1	1	/	1	1	/	_	_	_			
IM B34	9	M2C		1	1	1	1	1	1	1	1	1	-	-	-			
Self-ventilated energy-sav								ries 1	LA9									
Self-ventilated motors wit	h increase	ed output -	- Alumir	num :	serie	s 1L <i>l</i>	۱9											
				1LA	9 (alu	minur	n)											
Without flange																		
IM V5 with protective cover 1)	9	M1F		-	1	✓	1	✓	✓	✓	✓	✓	✓	✓				
With flange																		
IM V3	9	M1G		-	-	-	-	-	-	-	-	-	✓	✓				
With standard flange																		
IM V18 with protective cover 1)	9	M2A		-	1	1	1	1	/	1	1	1	-	-				
With special flange																		
		M2B		-	✓	1	✓	1	✓	✓	✓	✓	-	_				
IM B34	9	M2C		1	1	✓	✓	✓	1	✓	✓	✓	-	-				

<sup>✓</sup> With additional charge

Not possible

<sup>1)</sup> The "Second shaft extension" option, order code **K16** is not possible.

For frame sizes 180 M to 225 M, the 1LA5 motors can be supplied with two additional eyebolts; state identification code -Z and order code K32.

	tion code 12th position of the Order No.	with order code and plain text if		56	63 71	80	90	100	) 112	2 13:	2 160	180	) 200	) 22	5 250	) 28(	315 S/N	315 L 2- pole	4-, 6-, 8-pole
Self-ventilated energy-sav	ing motors	s with impr	oved ef	ficien	cy – C	ast-ir	on se	erie	s 1L	_A6	and 1	ILG	4						
								1L <i>/</i>	46 (c	ast-i	ron)	1L(	G4 (c	ast-i	ron)				
Without flange																			
IM V5 without protective cover 13	9	M1D						_	_	_	-	-	-	_	-	_	-	<b>√</b> <sup>2)</sup>	0
IM V6 <sup>1)</sup>	9	M1E						-	_	-	-	-	-	_	-	_	-	<b>√</b> <sup>2)</sup>	0
IM V5 with protective cover 1)3)	9	M1F						/	1	1	1	1	1	1	1	1	1	<b>√</b> <sup>2)</sup>	1
With flange																			
IM V3 <sup>4)</sup>	9	M1G						_	_	_	-	1	1	1	1	1	1	-	-
With standard flange																			
IM V18 with protective cover 3)	9	M2A						/	1	1	1	_	_	_	_	_	-	-	-
With special flange																			
IM V18 with protective cover 3)	9	M2B						1	1	1	1	-	_	-	-	-	-	-	-
IM B34	9	M2C						1	1	1	1	-	-	-	-	-	-	-	-
Self-ventilated motors with	n increase	d output –	Cast-irc	on ser	ies 1L0	G4													
												1L0	G4 (c	ast-i	ron)				
Without flange															Í				
IM V5 with protective cover 1)3)	9	M1F										1	1	1	1	1			
With flange																			
IM V3 <sup>4)</sup>	9	M1G										1	1	1	1	1			
Self-ventilated energy-sav	ing motors	s with high	efficier	ncv –	Cast-ir	on se	eries '	1L(	36										
3,												1L0	G6 (c	ast-i	ron)				
Without flange															•				
IM V5 without protective cover 13	9	M1D										_	_	_	_	_	_	<b>√</b> <sup>2)</sup>	0
IM V6 1)	9	M1E										_	_	_	_	_	_	<b>√</b> <sup>2)</sup>	0
IM V5 with protective cover 1)3)	9	M1F										1	/	/	/	/	/	<b>√</b> <sup>2)</sup>	1
With flange																			
IM V3 <sup>4)</sup>	9	M1G										1	1	1	1	1	1	_	_
Self-cooled motors withou	it external	fan – Alum	inum s	eries '	1LP7 a	nd 1	_P5												
					1LP7 (a							1LI (ali	umi-						
With flange																			
IM V3 <sup>5)</sup>	9	M1G				-	-	-	-	-	-	✓	1						
Special flange																			
IM B34	9	M2C			/ /	1	✓	/	1	1	✓	-	-						
Self-cooled motors without	ıt external	fan – Cast-	iron se	ries 1	LP4														
												1LI	P4 (c	ast-i	ron)				
Without flange																			
IM V5 without protective cover 13		M1D										-	-	-	_	_	-	<b>√</b> <sup>2)</sup>	0
IM V6 <sup>1)</sup>	9	M1E										-	-	-	-	-	-	<b>√</b> <sup>2)</sup>	0
With flange																			
IM V3 <sup>4)</sup>	9	M1G										1	1	1	1	1	1	-	-
<ul><li>O Without additional ch</li><li>✓ With additional charg</li><li>Not possible</li></ul>																			

Type of construc-

Additional identifica-

 $<sup>^{1)}\,</sup>$  If motors of frame sizes 180 M to 315 L are mounted on the wall, it is recommended that the motor feet are supported.

<sup>2) 60</sup> Hz version is possible on request.

 $<sup>^{\</sup>rm 3)}$  The "Second shaft extension" option, order code K16 is not possible.

<sup>4) 1</sup>LG4/1LG6/1LP4 motors of frame sizes 225 S to 315 L are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

<sup>5)</sup> For frame sizes 180 M to 200 L, the 1LA5 motors can be supplied with two additional eyebolts; state identification code -Z and order code K32.

3 m long

Connection box on NDE

auxiliary terminals

Terminal strip for main and

Options or order codes (supplement -Z is required)

Special versions Additional Motor type frame size identification code -Z with order code and plain text if required 56 63 71 80 90 100 112 132 160 180 200 225 250 280 315 Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5 1LA7 (aluminum) 1LA5 (aluminum) Motor protection Motor protection with PTC ther- A11 mistors with 3 embedded temperature sensors for tripping Motor protection with PTC ther- A12 mistors with 6 embedded temperature sensors for tripping and alarm 1) Motor temperature detection A23 with embedded temperature sensor KTY 84-130 Motor temperature detection A25 with embedded temperature sensors 2 x KTY 84-130 Temperature detectors for A31 tripping Installation of 3 PT 100 A60 resistance thermometers 1) Motor connection and connection box ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY <sup>2)</sup> ECOFAST motor plug EMC **G56** Han-Drive 10e for 230 VΔ/400 VY 3) K09 Connection box on RHS Connection box on LHS K10 K54 One cable gland, metal Cable gland, maximum K55 configuration Rotation of the connection box K83 through 90°, entry from DE Rotation of the connection box through 90°, entry from NDE K84 Rotation of connection box K85 0 0 0 0 through 180° Next larger connection box L00 External earthing L13 3 cables protruding, L44 O. R. O. R. O. R. 0.5 m long 3 cables protruding, L45 1 O. R. O. R. O. R. 1.5 m long 6 cables protruding, L47 O. R. O. R. O. R. 0.5 m long 6 cables protruding, 1.5 m long <sup>4)</sup> L48 6 cables protruding, L49

M64

M69

Special versions	Additional identification code -Z with order code and plain text if		Motor	type fr	ame si	ze											
Calf ventilated anarov on	required	a suitle issa	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motors	s with imp		a emc (alumi		– Alu	ımınu	m seri	ies il	A/ an	IG ILA		(alumi	num)			
Windings and insulation				(4.4	,								(	,			
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11		1	1	1	1	✓	✓	✓	✓	✓	1	1	1			
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12		✓	<b>✓</b>	✓	✓	✓	✓	✓	✓	✓	1	<b>✓</b>	/			
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13		✓	✓	<b>√</b>	✓	✓	✓	✓	✓	✓	√	✓	✓			
Temperature class 180 (H) at rated output and max. CT 60 °C			1	<i>'</i>	<i>√</i>	<i>'</i>	✓ 	✓ 	✓ 	✓ 	✓ 	1	<i>'</i>	<i>'</i>			
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19		-	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓ 	✓	✓ 	✓ 			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % 7)	C22		1	✓	<b>√</b>	✓	1	<b>✓</b>	1	1	/	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % 7)	C23		✓	✓	✓	✓	1	1	1	1	1	✓	✓	/			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % 7)	C24		1	1	1	1	1	1	1	✓	1	1	✓	1			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25		1	1	1	1	1	1	1	✓	1	1	✓	1			
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26		-	1	1	1	1	1	1	✓	1	1	1	1			
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	y50 • and specified output, CT°C or SA m above sea level		✓	<b>V</b>	<b>y</b>	<b>V</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	✓	<b>✓</b>	J	<b>V</b>	<b>V</b>			
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT °C or SA m above sea level		1	1	√	1	1	<b>√</b>	1	1	1	1	1	1			
Colors and paint finish																	
Special finish in RAL 7030 stone gray				_		_	_	_			_						
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y54 • and special finish RAL		1	1	1	1	<b>/</b>	✓	<b>/</b>	1	<b>/</b>	1	1	1			
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL		1	1	✓	1	1	1	1	1	1	√	1	1			
Sea air resistant special finish	M94		O. R.	O. R.	O. R.	O. R.	0. R.	0. R.	0. R.	O. R.	0. R.	O. R.	O. R.	O. R.			
·																	

Special versions	Additional identification code -Z with order code and plain text if			type f													
0-16	required	· · · · · · · · · · · · · · · · · · ·	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motors	s with imp				y – All	uminu	m sei	ries IL	.A/ an	a ILA		(alum	inm\			
Colors and paint finish (contin	ued)		ILA	(alum	iiiuiii)							ILA	(alum	illullij			
Unpainted	K23		0	0	0	0	0	0	0	0	0	0	0	0			
(only cast iron parts primed)																	
Unpainted, only primed	K24		1	✓	/	✓	✓	/	✓	✓	✓	1	1	✓			
Modular technology – Basic v																	
Mounting of separately driven fan	G17		_	_		_	_					/		1			
Mounting of brake 9)	G26		-	✓	✓	✓	✓	✓	✓	✓	✓	1	✓	✓			
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57		-	-	1	1	/	✓	1	1	✓	1	1	1			
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58		-	-	1	1	1	✓	1	1	✓	1	✓	1			
Modular technology - Combin	ations of ba	sic version	ns <sup>8)</sup>														
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61		-	-	-	-	-	1	1	1	✓	1	1	1			
Mounting of brake and 1XP8 001-1 rotary pulse encoder 9)	H62		-	-	-	-	-	1	1	1	1	1	1	1			
Mounting of brake and separately driven fan 9)	H63		-	-	-	-	-	1	✓	✓	✓	1	1	✓			
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder 9)	H64		-	-	-	-	-	1	✓	1	1	✓	1	1			
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97		-	-	-	-	-	1	1	1	1	1	1	1			
Mounting of brake and 1XP8 001-2 rotary pulse encoder 9)	H98		-	-	-	-	-	1	1	1	1	1	1	1			
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder 9)	H99		-	-	-	-	-	1	1	1	1	1	1	1			
Modular technology - Additio	nal versions																
Brake supply voltage 24 V DC	C00		_	1	1	/	1	1	1	✓	1	1	1	/			
Brake supply voltage 400 V AC	C01		_	1	1	1	1	1	1	✓	1	1	1	✓			
Brake supply voltage 180 V DC, for operation on MICROMASTER 411- ECOFAST 10)	C02		-	✓	✓	✓	1	✓	✓	/	-	-	-	-			
Mechanical manual brake release with lever (no locking)	K82		-	✓	1	✓	1	1	✓	✓	✓	✓	1	✓			
Special technology 8)																	
	H15		O. R.	O. R.	1	✓	1	1	/	1	-	-	-	-			
Mounting of LL 861 900 220 rotary pulse encoder	H70		-	-	-	-	-	1	1	✓	1	1	✓	✓			
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72		-	-	-	-	-	1	1	1	1	1	1	1			
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73		-	-	-	-	-	✓	1	✓	1	1	✓	✓			
Prepared for mounting LL 861 900 220	H78		-	-	-	-	-	1	✓	✓	1	1	1	✓			
Prepared for mounting HOG 9 D 1024 I	H79		-	-	-	-	-	1	1	1	1	1	/	1			
Prepared for mounting HOG 10 D 1024 I	H80		-	-	-	-	-	1	<b>✓</b>	<b>✓</b>	1	1	1	<b>✓</b>			
- · · · · · · · · · · · · · · · · · · ·															•		

Special versions	Additional identification code -Z with order code and plain text if required		Moto	r type 1	rame s	ize 80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-say	ing motors	s with im											200	220	200	200	010
cen ventuated energy sav	mg motor	with ini		(alum		All	allille	III 301	1100 11	LAT UI	IG IL	_	alum	inum)			
Mechanical design and degree	es of protect	ion	ILA,	(alaii	<i>.</i>							ILA	, (alaili				
Drive-end seal for flange-mounting motors, oil resistant to 0.1 bar <sup>12</sup> )	K17	.1011	1	1	1	1	1	1	1	1	1	1	1	1			
With two additional eyebolts for IM V1/IM V3	K32		-	-	-	-	-	-	-	-	-	1	1	1			
Low-noise version for 2-pole motors with clock- wise direction of rotation <sup>10)</sup>	K37		-	-	-	-	-	-	-	1	1	1	1	<b>√</b>			
Low-noise version for 2-pole motors with counter- clockwise direction of rotation	K38		-	-	-	-	-	-	-	1	1	1	1	<b>√</b>			
IP65 degree of protection <sup>13)</sup>	K50		1	/	/	/	/	/	/	1	/	1	/	1			
IP56 degree of protection (non-heavy-sea) 14)	K52		1	1	1	1	1	1	1	1	1	1	1	1			
Vibration-proof version	L03		1	1	1	1	1	1	✓	1	✓	1	✓	✓			
Condensation drainage holes <sup>15)</sup>	L12		1	1	1	1	1	1	1	✓	1	1	1	1			
Non-rusting screws (externally)	M27		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Mechanical protection for encoder <sup>16)</sup>	M68		-	-	-	1	1	1	1	1	1	1	/	1			
Coolant temperature and site																	
Coolant temperature -40 to +40 °C	D03		/	<u>/</u>	/	<i>'</i>	<i>'</i>	<i>'</i>	<i>'</i>	<i>'</i>	/	/	<i>'</i>	/			
Coolant temperature -30 to +40 °C	D04		<b>√</b>	<b>/</b>	1	<b>/</b>	<b>/</b>	<b>/</b>	/	/	/	/	<b>/</b>	1			
Designs in accordance with st		d specifica	tions														
CCC China Compulsory Certification 17)	D01		✓	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	_	-	_	_	-	_	_			
Electrical according to NEMA MG1-12	D30		✓ ·	<i>\</i>	✓ 	<i>'</i>	✓ 	<i>\</i>	✓ 	<i>\</i>	<i>'</i>	<b>/</b>	<i>\</i>	/			
Design according to UL with "Recognition Mark" 18)	D31		1	<i>'</i>	<i>'</i>	1	<i>'</i>	✓ 	<i>'</i>	✓ 	<i>'</i>	✓ •	✓ 	<i>\</i>			
Canadian regulations (CSA) 19)	D40		/	<b>√</b>	✓ <u> </u>	/	✓ <u> </u>	0	0	0	0	0	0	0			
PSE Mark Japan <sup>20)</sup>	D46		/	<b>√</b>	<b>✓</b>	<b>✓</b>	/	/	<b>√</b>	<b>√</b>		_	_	-			
VIIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate) <sup>21</sup>	K30		_	<b>√</b>		7	/	7	/	<b>√</b>	<b>√</b>	-	-	-			
Bearings and lubrication																	
Measuring nipple for SPM shock pulse measurement for bearing inspection <sup>22)</sup>	G50		-	-	-	-	-	1	1	1	1	1	1	1			
Bearing design for increased cantilever forces	K20		-	-	-	-	-	1	1	1	1	1	1	1			
Regreasing device <sup>22)</sup>	K40		-	-	-	-	-	1	1	1	/	1	1	1			
Located bearing DE	K94		1	1	/	/	1	1	1	1	1	1	1	1			
Located bearing NDE	L04		1	1	1	1	1	1	1	/							
Balance and vibration quantity																	
Vibration quantity A																	
Vibration quantity B	K02		/	/	/	<u> </u>	/	<u> </u>	/		/	/	/	<u>−</u>			
Full key balancing	L68		/	1	1	1	1	1	1	1	1	1	/	1			
Balancing without key	M37		1	1		· /			· /	· /	<u> </u>	1	· /	1			
<b>.</b>															-		

	identifica- tion code																
	<b>-Z</b> with order code																
	and plain text if																
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ring motor	s with im											200		200	200	0.0
			1LA	7 (alun	ninum)	)						1LA	5 (alun	ninum)			
Shaft and rotor																	
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>23</sup> )	K04		✓	1	<b>√</b>	1	1	<b>√</b>	/	1	1	1	✓	1			
Second standard shaft extension	K16		1	1	1	1	1	1	1	1	1	1	1	1			
Shaft extension with standard dimensions without featherkey way	K42		1	1	1	1	1	1	1	1	✓	V	1	1			
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		1	1	✓	✓	1	✓	1	1	✓	<b>√</b>	✓	1			
Standard shaft made of non- rusting steel	M65		-	-	-	1	✓	✓	✓	✓	✓	1	1	✓			
Non-standard cylindrical shaft extension <sup>24</sup> )	Y55 • and identification code		1	1	✓	✓	1	✓	✓	1	✓	V	1	1			
Heating and ventilation																	
Fan cover for textile industry	H17		_	-	-	✓	✓	✓	✓	✓	✓	1	✓	✓			
Metal external fan <sup>25)</sup>	K35		-	✓	✓	✓	✓	✓	✓	✓	✓	1	✓	✓			
Anti-condensation heaters for 230 V	K45		✓	✓	✓	✓	✓	✓	✓	✓	✓	1	1	✓			
Anti-condensation heaters for 115 V	K46		1	1	✓	✓	✓	✓	1	1	✓	1	1	1			
Rating plate and extra rating p	olates																
Second lubricating plate, supplied loose	B06		-	-	-	-	-	✓	✓	✓	✓	✓	✓	1			
Second rating plate, loose	K31		1	✓	1	✓	✓	✓	✓	✓	✓	1	✓	✓			
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		1	1	✓	✓	1	1	1	1	✓	1	1	1			
Extra rating plate with identification codes	Y82 • and identification code		1	1	✓	1	1	✓	1	1	1	1	1	1			
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		1	1	✓	1	1	✓	1	1	1	1	1	1			
Packaging, safety notes and to	est certifica	tes															
Without safety and commissioning note. Customer's declaration of renouncement required.	B00		0	0	0	0	0	0	0	0	0	0	0	0			
With one safety and startup guide per box pallet	B01		0	0	0	0	0	0	0	0	0	0	-	-			
Acceptance test certificate 3.1 according to EN 10204	B02		1	1	1	1	1	1	1	1	1	1	1	1			
Operating instructions German/English in print	B23		1	1	1	1	1	1	1	1	1	1	1	1			
Type test with heat run for vertical motors, with acceptance	F83		1	1	1	1	1	✓	1	1	✓	1	1	1			
Wire-lattice pallet	L99		0	0	0	0	0	0	0	0	0	0	-	-			
Connected in star for dispatch	M32		1	✓	✓	1	✓	1	1	1	✓	1	✓	✓			
Connected in delta for dispatch	M33		1	1	1	1	1	✓	1	1	✓	1	✓	✓			

- Standard version
- Standard version
   Without additional charge
   This order code only determines the price of the version Additional plain text is required.
   O. R. On request
   ✓ With additional charge
   Not possible

Special versions

Additional identifica-

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended
- Not possible for pole-changing motors. Only one sensor (temperature sen-
- sor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VA/400 VY and special voltage with voltage code 9 and order code L1U (400 VΔ). The following order codes cannot
- be used in combination with the ECOFAST plugs, order code G55: A12, C02, C18, D31, D40, G50, H15, H17, H62, H63, H64, H98, H99, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, Not possible for pole-changing motors. Only one sensor (temperature sen-
- sor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VΔ/400 VY and special voltage with voltage code **9** and order code **L1U** (400  $V\Delta$ ). The following order codes cannot be used in combination with the ECOFAST plugs, order code **G56**: **A12**,
- K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52. The following order codes can only be used in combination with the ECOFAST plugs, order code G56 only with order code C01 (AC 400 V) or C02 (DC 180 V): G26, H62, H63, H64, H98, H99.
- In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering. Not possible for pole-changing motors and/or for voltage codes 1 or 6.
- Cannot be used for motors in UL version (order code D31). Cannot be used for motors according to CSA approval (order code **D40**) for motor series 1LA5 frame size 180 to 225. The grease lifetime specified in Catalog D 81.1 part 0 "Introduction" refers to CT 40 °C. When the coolant temperature

rises by 10 K, the grease lifetime or relubrication interval is halved.

- No derating in combination with the following order codes: L2A, L2C, L2Q, L2R, L2S, L2T, L2U, L2V, L3E and L3G.) A second shaft extension is not possible. Please inquire for mounted brakes. The order codes listed cannot be combined within the various
- technologies nor with each other within the same technology system. This applies for:
- Modular technology– Basic versions of "Modular technology"
- Combination of special versions "Special technology"
- The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes C00, C01 and C02.
- <sup>10)</sup> Not possible in motors in a pole-changing version.
- Converter mounting is possible, if the MICROMASTER DA 51.3 type is specified for 230 V $\Delta$ /400 VY.
- 12) Not possible for type of construction IM V3. <sup>13)</sup> Not possible in combination with rotary pulse encoder HOG 9 D 1024I (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26).

- 14) Not possible in combination with brake 2LM8 (used for motors up to and
- including frame size 225, order code G26).
- 15) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes
- are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation

drainage holes situated between the feet on delivery are underneath.

- <sup>16)</sup> Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cowl
- 17) CCC certification is required for 2-pole motors ≤2.2 kW
- 4-pole motors ≤1.1 kW 6-pole motors ≤0.75 kW A23, A31, C00, C18, D31, D40, G50, H15, H17, K04, K15, K16, K34, K35,
  - 8-pole motors ≤0.55 kW The order code D01 for frame sizes 100 and 112 is only valid for polechanging motors 1LA7.
  - <sup>18)</sup> Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
    - <sup>19)</sup> The rated voltage is indicated on the rating plate without voltage range. <sup>20)</sup> "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
  - <sup>21)</sup> Not possible for pole-changing motors.

  - <sup>22)</sup> Not possible when brake is mounted.
  - <sup>23)</sup> Can be combined with deep-groove bearings of series 60.., 62.. and 63...
  - Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20), brake mounting or encoder mounting  $^{24)}$  When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey
  - the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE.
  - The featherkeys are supplied in every case. For order codes Y55 and K16: - Dimensions D and DA ≤ internal diameter of roller bearing (see dimesnion tables under "Dimensions")

tion with the low-noise version - order code K37 or K38.

Dimensions E and EA ≤2 x length E (normal) of the shaft extension For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".  $^{25)}$  For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combina-

way is positioned centrally on the shaft extension. The length is defined by

Special versions	Additional identification code -Z with order code and plain text if		Motor	r type f	frame :	size											
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	g motors v	ith high	effic	iency	– Alı	ıminu	ım sei	ries 11	LA9								
			1LA9	(alum	inum)	)											
Motor protection																	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11		1	1	1	✓	✓	1	✓	✓	1	✓	1				
Motor protection with PTC ther- mistors with 6 embedded tempe- rature sensors for tripping and alarm 1)	A12		✓	1	1	✓	1	✓	1	1	✓	✓	/				
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>1)</sup>	A23		1	/	1	1	<b>√</b>	<b>√</b>	1	1	<b>√</b>	1	1				
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25		1	1	1	✓	1	1	✓	✓	✓	1	1				
Temperature detectors for tripping <sup>1)</sup>	A31		1	1	✓	1	1	1	✓	1	1	✓	1				
thermometers 1)	A60		-	-	-	-	-	/	1	/	✓	✓	1				
Motor connection and connectio																	
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY <sup>2)</sup>	G55		/	/	/	<i>'</i>	✓ 	✓ 	/	✓ 	_	-	-				
ECOFAST motor plug EMC Han- Drive 10e for 230 VΔ/400VY 3)	G56		✓		<b>✓</b>	<i>'</i>	<b>✓</b>	<i>'</i>	<i>\</i>	✓ 	-	-	-				
Connection box on RHS	K09		-	_	-	/	/	<b>✓</b>	/	/	<b>✓</b>	/	/				
Connection box on LHS	K10		-	-	-	✓	✓	✓	✓	✓	✓	✓	✓				
One cable gland, metal	K54		-	-	-	-	-	✓	/	✓	✓	-	_				
Cable gland, maximum configuration	K55		✓	<b>✓</b>	<b>✓</b>	✓	<b>√</b>	<b>√</b>	✓	✓	✓	<b>√</b>	<b>√</b>				
Rotation of the connection box through 90°, entry from DE	K83		/	/	/	/	<i>\</i>	✓ 	/	<i>\</i>	✓ 	<i>\</i>	✓				
Rotation of the connection box through 90°, entry from NDE	K84		1	<i>'</i>	<i>\</i>	/	<i>\</i>	✓ 	<i>\</i>	✓ 	✓ 	/	<i>'</i>				
Rotation of connection box through 180°	K85		1	✓	✓	<i>\</i>	✓ 	0	0	0	0	/	<i>'</i>				
Next larger connection box	L00		-	-	-	-	-	-		-	-	/	/				
External earthing	L13		/	/	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	/	<b>√</b>	<b>✓</b>	<b>✓</b>				
3 cables protruding, 0.5 m long <sup>4)5)</sup>	L44		/	<b>✓</b>	/	/	<u>/</u>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	O. R.					
3 cables protruding, 1.5 m long <sup>4)5)</sup>			<b>√</b>	<u>/</u>	<u>/</u>	<u>/</u>	_/				<b>✓</b>		0. R.				
6 cables protruding, 0.5 m long 4)			/	<b>✓</b>	/	<b>✓</b>	<u>/</u>	<u>/</u>	<b>✓</b>	<b>✓</b>	<b>✓</b>		O. R.				
6 cables protruding, 1.5 m long 4)			✓	✓	<b>√</b>	✓	✓	✓	✓	✓	✓	<b>√</b>	✓				
6 cables protruding, 3 m long 4)	L49		/	/	/	/	<b>✓</b>	<b>✓</b>	/	/	/	/					
Connection box on NDE	M64		-	/	/	/	/	/	/	/	/	/	/				
Windings and insulation Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11		1	1	1	1	1	1	1	1	1	1	1				
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12		1	1	1	1	1	1	1	1	1	1	1				
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13		1	✓	1	1	✓	✓	1	1	✓	1	1				
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19		-	1	1	1	1	1	1	1	1	1	1				
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22		1	1	1	1	1	1	1	1	✓	1	1				

Special versions	Additional identification code -Z with order code and plain text if required		Moto	r type f	rame s	ize 80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	g motors w	ith high								132	100	100	200	223	230	200	313
3,				(alum													
Windings and insulation (continu	ed)																
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % 6)	C23		✓	1	1	1	1	1	✓	✓	✓	1	1				
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>6)</sup>	C24		1	1	1	1	✓	1	1	1	1	1	1				
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25		1	1	✓	✓	1	✓	✓	✓	✓	✓	1				
Increased air humidity/temperature with 60 to 100 g water perm <sup>3</sup> of air	C26		-	1	✓	1	1	✓	<b>√</b>	✓	✓	✓	1				
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 ● and specified output, CT °C or SA m above sea level		<b>√</b>	<b>√</b>	1	1	1	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>				
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT °C or SA m above sea level		<b>√</b>	<b>✓</b>	1	/	/	✓ ·	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	/				
Colors and paint finish																	
Special finish in RAL 7030 stone gray			0	0			0	0	0	_		_	0				
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y54 • and special finish RAL		•	/	✓	/	<i>y</i>	✓	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>				
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL		✓	1	1	<b>√</b>	✓	✓	1	1	1	1	1				
Sea air resistant special finish	M94		O. R.	0. R.	O. R.	0. R.	0. R	. O. R.	O. R.	0. R.	O. R.	O. R.	0. R.				
Unpainted (only cast iron parts primed)	K23		0	0	0	0	0	0	0	0	0	0	0				
Unpainted, only primed	K24		/	/	/	/	1	1	1	/	/	/	1				
Mechanical design and degrees		1				•	·										
Drive-end seal for flange-mounting motors, oil-resistant to 0.1 bar Not possible for IM V3 type of construction.	K17		1	1	✓	1	1	1	1	1	✓	1	1				
Low-noise version for 2-pole motors with clockwise direction of rotation	K37		-	-	-	-	-	-	-	-	-	1	1				
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38		-	-	-	-	-	-	-	-	-	1	1				
IP65 degree of protection	K50		1	1	/	1	1	1	1	1	1	1	1				
IP56 degree of protection	K52		1	1	1	1	1	1	1	1	✓	1	✓				
(non-heavy-sea)	L03		/	/	/	/	/	/	/	/	/	/	/				
Vibration-proof version  Condensation drainage holes 7)	L03		✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	1	✓ ✓	✓ ✓	✓ ✓	✓ ✓	1				
Non-rusting screws (externally)	M27		/	<u> </u>	✓ ✓	<u>/</u>	✓ ✓	<u>/</u>	1	<i>y</i>	<u>/</u>	<u>/</u>	<u>✓</u>				
radaning dorowd (oxtornally)				•					•	•	•						

Special versions	Additional identification code -Z with order code		Moto	r type f	rame s	size											
	and plain text if																
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-savin	g motors w	ith high	effic	iency	– Alu	ıminu	m sei	ies 1L	_A9								
			1LA9	(alum	inum)												
Coolant temperature and site alt	itude																
Coolant temperature -40 to +40 °C			-	-	-	✓	✓	✓	✓	✓	✓	-	-				
Coolant temperature –30 to +40 °C			1	1	1	1	1	/	✓	1	✓	1	✓				
Designs in accordance with stan		pecification					,										
CCC China Compulsory Certification 8)	D01		1	<b>✓</b>	<b>√</b>		<b>√</b>	_	_	_	_	_					
Electrical according to NEMA MG1-12 9)	D30																
Design according to UL with "Recognition Mark" 10)	D31		✓	✓	✓	✓	✓	✓	✓	✓	<b>√</b>	<b>√</b>	✓				
Certified for Korea according to KS C4202 11)	D33		-	-	-	<b>✓</b>	✓	<b>✓</b>	✓	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>				
Canadian regulations (CSA) 12)	D40		/	/	/	<b>√</b>	<b>√</b>	<b>✓</b>	/	/	✓	✓	✓				
PSE Mark Japan <sup>13)</sup>	D46		/	/	/	/	<b>✓</b>	/	/	/	-	-	-				
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30		_	/	/	/	<b>/</b>	/	1	/	/	-	-				
Bearings and lubrication																	
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		-	-	-	-	-	1	1	1	<b>√</b>	1	1				
Bearing design for increased cantilever forces	K20		-	-	-	-	-	1	1	✓	1	1	1				
Regreasing device	K40		-	-	_	_	-	/	/	✓ <sup>14)</sup>	/	/	/				
Located bearing DE	K94		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Located bearing NDE	L04		✓	1	1	1	1	✓	1	✓							
Balance and vibration quantity																	
Vibration quantity A																	
Vibration quantity B	K02		/	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	/	/	/	/				
Full key balancing	L68		/	1	/	/	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	/	<b>√</b>				
Balancing without key	M37		1	/	1	/	/	/	/	/	1	1	1				
Shaft and rotor Concentricity of shaft extension,	K04		1	1	/	/	1	1	1	1	/	1	1				
coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>15</sup> )																	
Second standard shaft extension	K16		/	/	/	1	/	/	1	/	/	1	1				
Shaft extension with normal dimensions without featherkey way	K42		1	✓	1	1	1	1	✓	1	1	1	1				
Concentricity of shaft extension in accordance with DIN 42955	L39		✓	✓	1	✓	1	✓	1	✓	✓	✓	✓				
Tolerance R  Non-standard cylindrical shaft	<b>Y55 •</b> and		1	/	/	/	/	/	/	/	/	/	/				
extension <sup>16)</sup>	identifica- tion code																
Heating and ventilation																	
Fan cover for textile industry  Metal external fan <sup>17)</sup>	H17		-	-	-	-	-	-	<u>/</u>	<b>√</b>	-	-	-				
Anti-condensation heaters for	K35 K45		- <b>/</b>	1	√ ✓	√ √	1	1	✓ ✓	1	√ ✓	1	√ √				
230 V Anti-condensation heaters	K46		1	1	1	1	1	1	1	1	/	1	/				
for 115 V  Rating plate and extra rating plate	tos																
Second lubricating plate, supplied loose	B06		-	-	-	-	-	1	1	1	1	1	1				
Second rating plate, loose	K31		✓	1	✓	1	✓	✓	✓	✓	✓	✓	1				
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		1	1	1	1	1	1	1	1	1	1	1				
Extra rating plate with identification codes	Y82 • and identification code		1	1	1	1	1	1	1	1	1	1	1				
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	<b>√</b>	1	1	1	1	1	1	<b>✓</b>	1	1				
For legend and footnotes, se	e Page 21.																

Self-ventilated energy-savin	-Z with order code and plain text if required	iith high	56	63	71 Alu	80	90	100	112	132	160	180	200	225	250	280	315
Sell-velitilated ellergy-saviil	g motors w	iui iligii					III SCI	ies il	AJ								
				(alum	inum)												
Packaging, safety notes, docum	entation and	test certi	ficate	S													
Without safety and commissio- ning note. Customer's declaration of renouncement required.	B00		0	0	0	0	0	0	0	0	0	0	0				
With one safety and startup guide per box pallet	B01		0	0	0	0	0	0	0	0	0	0	-				
Acceptance test certificate 3.1 according to EN 10204	B02		1	✓	1	1	1	1	✓	✓	✓	✓	✓				
Operating instructions German/English in print	B23		1	✓	1	✓	✓	✓	✓	✓	✓	✓	✓				
Type test with heat run for vertical motors, with acceptance	F83		1	1	1	1	1	1	1	1	1	1	✓				
Wire-lattice pallet	L99		0	0	0	0	0	0	0	0	0	0	-				
Connected in star for dispatch	M32		/	/	/	/	/	/	/	/	/	1	/				
Connected in delta for dispatch	M33		/	/	/	/	/	/	/	/	/	1	/				

- Standard version
- Without additional charge
- This order code only determines the price of the version Additional plain text is required.

Additional

identifica-

- O. R. Possible on request
- ✓ With additional charge
- Not possible

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VA/400 VY and special voltage with voltage code 9 and order code L1U (400 VA). The following order codes cannot be used in combination with the ECOFAST plugs, order code G55: A12, C02, C18, D31, D40, G26, G50, H15, H17, H62, H63, H64, H98, H99, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.
- Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VA/400 VY and special voltage with voltage code 9 and order code L1U (400 VA). The following order codes cannot be used in combination with the ECOFAST plugs, order codes G56: A12, A23, A31, D31, D40, G50, H17, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, L03, L44, L45, L47, L48, L49, L51, L52.
- 4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 5) Not possible for voltage code 1 or 6.
- No derating in combination with the following order codes: L2A, L2C, L2Q, L2R, L2S, L2T, L2U, L2V, L3E and L3G.
- 7) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 8) CCC certification is required for
  - 2-pole motors ≤2.2 kW
     4-pole motors ≤1.1 kW
  - 4-pole motors ≤1.1 kW6-pole motors ≤0.75 kW
  - 8-pole motors ≤0.55 kW

- Possible up to 600 V max. For EPACT version or UL standard version (no order code necessary). The rated voltage is indicated on the rating plate without voltage range.
- 10) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- <sup>11)</sup> For Korea are certified:
  - 2-pole motors ≤0.75 kW
  - 4-pole motors ≤0.75 kW
  - 6-pole motors ≤0.75 kW
- <sup>12)</sup> The rated voltage is indicated on the rating plate without voltage range.
- 13) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 14) Not possible for 1LA9 134-6..□□.
  - 15) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**), brake mounting or encoder mounting.
  - 16) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The featherkeys are supplied in every case. For order codes Y55 and K16: Dimensions D and DA ≤ internal diameter of roller bearing
    - (see dimesnion tables under "Dimensions")

       Dimensions E and EA ≤2 x length E (normal) of the shaft extension
      For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".
  - 17) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is already included (standard version) in combination with the low-noise version.

Options or order codes (supplen	nent <b>-Z</b> is requ	uired)														
Special versions	Additional identification code -Z with order code and plain text if	Mote	or type	frame	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with incre	eased output	– Alumi	inum	series	1LA	9										
		1LA	9 (aluı	minum	)											
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11	1	1	1	1	1	✓	1	1	1	1	1				
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12	✓	✓	1	✓	✓	✓	1	1	1	1	1				
Motor temperature detection with embedded temperature sensor KTY 84-130 1)	A23	✓	1	1	1	1	✓	1	1	1	1	<b>✓</b>				
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25	✓	1	1	1	1	1	1	1	1	1	1				
Temperature detectors for tripping 1)	A31	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Installation of 3 PT 100 resistance thermometers 1)	A60	-	-	-	-	-	1	1	1	1	1	1				
Motor connection and connection bo	x															
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY <sup>2)</sup>	G55	✓	✓	1	✓	✓	1	1	-	-	-	-				
Connection box on RHS	K09	-	-	-	1	1	1	1	1	1	1	/				
Connection box on LHS	K10	_	-	-	✓	✓	✓	✓	✓	✓	✓	✓				
One cable gland, metal	K54	_	-	-	-	-	✓	✓	✓	✓	-	-				
Cable gland, maximum configuration	K55	1	✓	✓	✓	✓	1	✓	✓	✓	✓	✓				
Rotation of the connection box through 90°, entry from DE	K83	✓	1	✓	1	1	✓	✓	✓	1	1	1				
Rotation of the connection box through 90°, entry from NDE	K84	✓	1	1	1	1	✓	1	1	1	1	1				
Rotation of connection box through 180°	K85	✓	1	1	1	1	0	0	0	0	1	1				
Next larger connection box	L00	_	-	-	-	-	-	-	-	-	✓	/				
External earthing	L13	1	1	1	1	1	✓	1	1	1	1	1				
3 cables protruding, 0.5 m long 3)4)	L44	1	1	1	1	1	✓	1	1	1	0. R.	0. R.				
3 cables protruding, 1.5 m long 3)4)	L45	1	✓	1	✓	✓	✓	1	✓	✓	0. R.	0. R.				
6 cables protruding, 0.5 m long 3)	L47	1	✓	✓	✓	✓	✓	✓	✓	✓	0. R.	0. R.				
6 cables protruding, 1.5 m long 3)	L48	1	✓	1	✓	✓	✓	1	✓	✓	✓	1				
6 cables protruding, 3 m long 3)	L49	1	✓	✓	✓	✓	1	✓	✓	✓	✓	✓				
Connection box on NDE	M64	_	1	1	1	1	1	1	1	1	1	1				
Windings and insulation																
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19	-	1	1	1	1	1	1	1	1	1	1				
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26	-	✓	1	✓	✓	1	1	1	1	1	✓				

Special versions	Additional identification code -Z with order code and plain text if	Moto	or type	frame s	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with incr	eased output	– Alumi	inum s	series	1LA9	)										
		1LA	9 (alun	ninum)												
Colors and paint finish																
Special finish in RAL 7030 stone gray		_		_												
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y54 • and special finish RAL	<b>/</b>	<b>√</b>	✓ 	✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	✓ 	<i>,</i>	<b>√</b>				
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL	✓	1	✓	1	1	1	✓	1	✓	1	1				
Sea air resistant special finish	M94	O. F	R. O. R	. O. R.	0. R	. O. R	. O. R	. O. R	. O. R	. O. R	. O. R.	. O. R.				
Unpainted (only cast iron parts primed)	K23	0	0	0	0	0	0	0	0	0	0	0				
Unpainted, only primed	K24	1	✓	1	1	1	1	✓	✓	1	1	✓				
Mechanical design and degrees of p	rotection															
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction.	K17	✓	<b>√</b>	/	<b>√</b>	1	<b>✓</b>	<b>✓</b>	1	/	<b>√</b>	/				
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	_	-	-	-	-	-	-	-	-	1	1				
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	-	-	-	-	-	-	-	-	-	1	1				
IP65 degree of protection	K50	1	✓	1	1	1	✓	✓	✓	1	1	✓				
IP56 degree of protection (non-heavy-sea)	K52	1	1	✓	✓	1	1	1	1	✓	✓	1				
Vibration-proof version	L03	1	✓	/	1	1	✓	✓	✓	✓	1	✓				
Condensation drainage holes	L12	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Non-rusting screws (externally)	M27	1	1	1	1	1	1	✓	1	1	1	✓				
Coolant temperature and site altitude																
Coolant temperature -40 to +40 °C	D03	-	-	-	/	/	/	<b>✓</b>	/	/	-	-				
Coolant temperature –30 to +40 °C	D04	<b>√</b>	1	/	/	/	/	/	/	/	/	/				
Designs in accordance with standard CCC China Compulsory Certification 5		ations	1	1	1	1										
Electrical according to NEMA MG1-12 <sup>6)</sup>		1		1	1	1										
	D31	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1	1		<u> </u>	<u> </u>	<u> </u>				
Design according to UL with "Recognition Mark" 7)																
Canadian regulations (CSA) 8)	D40	1	✓	1	1	✓	1	✓	✓	✓	✓	✓				
PSE Mark Japan 9)	D46	1	1	/	1	/	/	1	/	-	-	-				
Bearings and lubrication  Measuring nipple for SPM shock pulse	G50	-	-	-	-	_	1	1	1	1	1	✓				
measurement for bearing inspection  Bearing design for increased cantilever forces	K20	_	-	-	-	-	1	1	✓	✓	1	<b>√</b>				
Regreasing device	K40	_	_	_	_	_	1	/	/	/	/	/				
Located bearing DE	K94	1	/	1	/	/	1	1	/	1	1	/				
Located bearing NDE	L04	1	1	1	1	1	1	1	1							
Balance and vibration quantity																
Vibration quantity A																
Full key balancing	L68	1	1	1	1	1	1	1	1	1	1	✓				
Balancing without key	M37	1	✓	1	1	1	✓	1	✓	✓	✓	✓				

	tion code - <b>Z</b> with																
	order code and plain text if required		50	00	7.1	00	00	100	440	100	100	100	000	005	050	000	045
Self-ventilated motors with incre	<u> </u>	ıt A	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Sen-ventuated motors with micro	eased outpi	ut – Al			ninum		9										
Shaft and rotor			ILA	o (aiui	iiiiiuiii	,											
Concentricity of shaft extension,	K04		,	,	,	,	,	,	,	1	1	1	1				
coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>(0)</sup>			•	•	•	•	•	•	•	•	•	•	•				
Second standard shaft extension	K16		✓	✓	1	✓	✓	✓	✓	✓	✓	✓	1				
Shaft extension with normal dimensions without featherkey way	K42		✓	1	1	✓	1	1	1	1	✓	✓	✓				
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	1	1	1	✓	1	1	1	✓	1	1				
Non-standard cylindrical shaft extension 11)	Y55 • and identification code		1	1	✓	✓	✓	1	✓	1	✓	✓	✓				
Heating and ventilation																	
Fan cover for textile industry	H17		_	_	-	-	-	-	/	1	-	-	-				
Metal external fan <sup>12</sup> )	K35		-	1	1	1	1	/	✓	1	/	1	/				
Anti-condensation heaters for 230 V	K45		1	1	1	1	/	✓	✓	1	✓	/	✓				
Anti-condensation heaters for 115 V	K46		1	1	1	✓	1	1	✓	1	/	1	✓				
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06		-	-	-	-	-	1	1	1	✓	1	✓				
Second rating plate, loose	K31		1	✓	1	✓	1	/	✓	✓	/	1	✓				
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		1	1	✓	✓	✓	✓	✓	1	✓	✓	1				
Extra rating plate with identification codes	Y82 • and identification code		1	1	✓	✓	✓	✓	✓	1	✓	✓	1				
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		1	1	✓	✓	✓	1	1	1	✓	1	1				
Packaging, safety notes, documenta	tion and test	certific	ates														
Without safety and commissioning note. Customer's declaration of renouncement required.	B00		0	0	0	0	0	0	0	0	0	0	0				
With one safety and startup guide per box pallet	B01		0	0	0	0	0	0	0	0	0	0	-				
Acceptance test certificate 3.1 according to EN 10204	B02		1	1	1	1	1	1	1	1	1	1	1				
Operating instructions German/English in print	B23		✓	1	1	✓	1	1	1	1	✓	✓	✓				
Type test with heat run for vertical motors, with acceptance	F83		✓	1	1	1	1	1	1	1	1	1	1				
Wire-lattice pallet	L99		0	0	0	0	0	0	0	0	0	0	-				
Connected in star for dispatch	M32		1	1	1	1	1	✓	1	1	1	1	/				
Connected in delta for dispatch	M33		✓	1	1	1	1	1	1	1	1	1	✓				

Standard version

Special versions

Additional identifica-

- Without additional charge
  This order code only determines the price of the version –
  Additional plain text is required.
- O. R. Possible on request

  ✓ With additional charge
- Not possible

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
  - Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VΔ/400 VY and special voltage with voltage code and order code L1U (400 VΔ). The following order codes cannot be used in combination with the ECOFAST plugs, order code G55: A12, C02, C18, D31, D40, G26, G50, H15, H17, H62, H63, H64, H98, H99, K04, K15, K16, K34, K35, K40,
- K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.

  In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 4) Not possible for voltage codes **1** or **6**.
- Not possible for voltage codes I
- 5) CCC certification is required for
  - 2-pole motors ≤2.2 kW4-pole motors ≤1.1 kW
  - 6-pole motors ≤0.75 kW
- 8-pole motors ≤0.55 kW
   Possible up to 600 V max. For EPACT version or UL standard version
- (no order code necessary).
   Possible up to 600 V max. The rated voltage is indicated on the rating
- plate without voltage range.

  The rated voltage is indicated on the rating plate without voltage range.

- 9) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 10) Can be combined with deep-groove bearings of series 60..., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**), brake mounting or encoder mounting.
- 11) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard
  - way is positioned centrally on the snaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE.
  - The featherkeys are supplied in every case. For order codes **Y55** and **K16**: Dimensions D and DA ≤ internal diameter of roller bearing
  - (see dimesnion tables under "Dimensions")

     Dimensions E and EA ≤2 x length E (normal) of the shaft extension
  - For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".
- 12) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combination with the low-noise version order code K37 or K38.

Options or order codes (suppl	ement <b>-Z</b> is	required)														
Special versions	Additional identification code -Z with order code and plain text if required			frame s												
	<u> </u>	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wit	n improve	deffic	iency	– Cas	st-iron				1 1LG4						
Motor protection							1LA6	cast (cast	-iron)		1LG	4 (cast	-iron)			
Motor protection with PTC	A11						1	1	1	1	1	1	1	1	1	1
thermistors with 3 embedded temperature sensors for tripping 1)	All						•	•	•	•		•	•	•	•	•
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12						✓	<b>√</b>	/	✓	1	1	1	1	1	1
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>1)</sup>	A23						✓	1	1	1	1	1	1	1	1	1
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25						✓	1	1	1	1	1	1	1	1	1
Temperature detectors for tripping 1)	A31						1	/	/	/	1	/	/	/	/	/
Installation of 3 PT 100 resistance thermometers 1)	A60						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding 1)	A61						-	-	-	-	1	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings 1)	A72						-	-	-	-	1	1	1	✓	1	1
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings 1)	A78						-	-	-	-	1	1	1	1	1	1
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings 1)	A80						-	-	-	-	1	1	1	✓	1	1
Motor connection and connection	box															
Two-part plate on connection box	K06						-	-	-	-	-	✓	1	1	✓	✓
Connection box on RHS	K09						1	✓	✓	✓	1	✓	1	✓	✓	✓
Connection box on LHS	K10						1	/	✓	✓	1	1	1	1	1	1
Connection box on top, feet screwed on	K11						-	-	-	-	/	<b>✓</b>	<b>✓</b>	<b>✓</b>	/	<b>✓</b>
Connection box in cast-iron version	K15										1	✓	✓			
One cable gland, metal	K54						1	/	<b>√</b>	✓	1	/	/	/	✓	/
Cable gland, maximum configuration	K55						✓	✓	✓	1	1	✓	1	<b>√</b>	<b>√</b>	✓
Rotation of the connection box through 90°, entry from DE	K83						✓	1	1	✓	1	1	✓	✓	1	1
Rotation of the connection box through 90°, entry from NDE	K84						✓	1	1	✓	1	✓	1	1	1	1
Rotation of connection box through 180°	K85						1	1	1	1	1	✓	1	1	1	1
Next larger connection box	L00						-	-	-	-	1	1	1	1	✓	1
External earthing	L13						1	1	✓	✓						

Special versions	Additional identification code -Z with order code and plain text if	Mot	or type	frame s	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wit	h improve	d effic	iency	– Cas	st-iron	serie	s 1LA	A6 and	l 1LG4						
							1LA	6 (cast	t-iron)		1LG4	(cast-	iron)			
Motor connection and connection	box (continue	ed)														
Undrilled entry plate	L01						_	_	_	_	0	0	0	0	0	0
6 cables protruding, 1.5 m long 2)	L48						_	-	_	_	1	/	/	0. R.	0. R.	O. R.
6 cables protruding, 3 m long 2)	L49						_	_	_	_	1	1	/	0. R.	O. R.	O. R.
Protruding cable ends – right side 3)	L51						_	_	_	_	O. R.	0. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side 3)	L52						_	_	_	_	O. R.	0. R.	0. R.	0. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97						_	_	_	_	1	/	/	/	1	1
Stud terminal for cable connection, accessories pack (3 items)	M46						-	-	-	-	-	-	-	✓	1	1
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47						-	-	-	-	-	-	-	✓	1	✓
Windings and insulation																
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11						1	1	1	1	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12						1	1	1	1	✓ <sup>4)</sup>					
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13						1	1	1	1	1	1	1	1	1	✓
Temperature class 180 (H) at rated output and max. CT 60 °C <sup>5)</sup>	C18						1	1	1	1	1	1	1	/	1	1
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19						1	1	✓	1	1	1	1	1	1	1
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22						1	1	1	1	✓ <sup>4)</sup>					
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23						1	1	✓	1	✓ <sup>4)</sup>					
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24						✓	1	✓	✓	✓ <sup>4)</sup>					
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25						1	1	✓	1	✓ <sup>4)</sup>					
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26						✓	1	✓	✓	1	✓	✓	✓	1	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT °C or SA m above sea level						J	/	<b>✓</b>	/	1	<b>√</b>	1	/	/	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT °C or SA m above sea level						1	✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	1	1	<b>√</b>	√ ·

Special versions	Additional identification code -Z with order code and plain text if		or type	frame s	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wi	ith improve	d effic	eiency	<ul><li>Cas</li></ul>	t-iron	serie	s 1LA	6 and	1LG4						
							1LA6	(cast-	iron)		1LG4	(cast-	iron)			
Colors and paint finish																
Standard finish in RAL 7030 stone gray							-	-	-	-	_	_		_	_	
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y53 • and standard finish RAL						-	-	-	-	✓	✓	✓	<b>√</b>	✓	✓
Special finish in RAL 7030 stone gray 6)	K26										✓	✓	1	1	1	1
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9002, 9005	Y54 • and special finish RAL						<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	✓	<b>√</b>	✓	✓	<b>√</b>	<b>√</b>
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL						1	1	1	1	✓	1	1	<b>✓</b>	1	✓
Offshore special finish	M91						O. R.	O. R.	0. R.	O. R.	1	✓	✓	✓	✓	1
Sea air resistant special finish	M94						O. R.	0. R.	0. R.	O. R.	O. R.	0. R.	0. R.	O. R.	0. R.	O. R.
Unpainted (only cast iron parts primed)	K23						0	0	0	0	0	0	0	0	0	0
Unpainted, only primed	K24						1	1	1	✓	1	1	/	/	/	1
Modular technology - Basic versio	ns <sup>7)</sup>															
Mounting of separately driven fan 8)	G17						1	✓	✓	1	1	✓	✓	✓	✓	1
Mounting of brake 8) 9)	G26						_	-	-	-	1	✓	✓	✓	✓	1
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57						✓	✓	✓	✓	1	✓	1	✓	✓	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58						1	1	1	1	1	1	1	1	1	1
Modular technology - Combination	ns of basic	versions 7)														
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61						1	1	1	1	1	1	1	1	1	1
Mounting of brake and 1XP8 001-1 rotary pulse encoder 9)	H62						-	-	-	-	1	1	1	1	1	✓
Mounting of brake and separately driven fan <sup>8) 9)</sup>	H63						-	-	-	-	1	1	1	1	1	1
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder 9)	H64						-	-	-	-	1	1	1	<b>√</b>	1	<b>√</b>
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97						1	1	1	1	1	1	1	✓	1	1
Mounting of brake and 1XP8 001-2 rotary pulse encoder 9)	H98						-	-	-	-	1	1	1	1	1	1
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder 9)	H99						-	-	-	-	1	✓	✓	✓	✓	✓

Special versions	Additional identification code -Z with order code and plain text if	Motor type frame s	size										
	required	56 63 71	80 90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wit	h improved efficiency	– Cast-iron s				1LG4		, .				
Modular technology – Additional v	oreione			1LA6	(cast-	iron)		1LG4	(cast-	-iron)			
Brake supply voltage 24 V DC	C00			_	_		_	1	/	/	/	1	1
Brake supply voltage 400 V AC	C01			_	_	_	_	1	<del>'</del>	<u> </u>	· /	· /	<del>,</del>
Mechanical manual brake release	K82			-	-	-	-	1	1	1	1	1	<b>✓</b>
with lever (no locking)  Special technology <sup>7)</sup>													
Mounting of LL 861 900 220 rotary pulse encoder	H70			1	1	1	1	1	1	1	1	1	1
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72			O. R.	O. R.	O. R.	O. R.	1	1	/	1	1	1
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73			-	-	-	-	1	1	✓	1	1	✓
Prepared for mounting LL 861 900 220	H78			1	1	<b>✓</b>	1	1	1	1	1	1	1
Prepared for mounting HOG 9 D 1024 I	H79			O. R.	O. R.	O. R.	O.R.	1	1	1	1	1	✓
Prepared for mounting HOG 10 D 1024 I	H80			-	-	-	-	1	1	1	1	1	1
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15			1	1	1	1	✓	1	1	✓	<b>√</b>	1
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16			√	1	1	1	✓	1	1	✓	✓	1
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm			-	-	-	-	✓	1	✓	✓	✓	1
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm			-	-	-	-	✓	1	✓	✓	✓	1
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm			-	-	-	-	V	1	1	✓	✓	1
Mechanical design and degrees of					_	_	_			_	_		
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction (0)	K17			/	/	/	/	<i>y</i>	/	/	<i>y</i>	<i>y</i>	/
Low-noise version for 2-pole motors with clockwise direction of rotation 11)	K37			-	-	1	1	1	1	1	1	1	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>11)</sup>	K38			-	-	✓	✓	1	✓	1	1	1	1
IP65 degree of protection <sup>12)</sup>	K50			/	1	✓	1	1	✓	1	1	1	✓
IP56 degree of protection (non-heavy-sea) <sup>13)</sup>	K52			✓	1	1	✓	1	1	✓	1	1	1
Vibration-proof version	L03			1	1	1	1	-	-	-	_	_	-
Condensation drainage holes <sup>14)</sup>	L12			1	1	1	1	_					
Non-rusting screws (externally)	M27			/	/	1	/	1	1	/	1	1	1
Earth brushes for converter-fed operation	M44			-	-	-	-	-	-	-	-	O. R.	O. R.
Mechanical protection for encoder <sup>15</sup> )	M68			/	/	/	1	1	1	1	<b>√</b>	/	1

Special versions	Additional identification code -Z with order code and plain		r type frame s	size										
	text if required	56	63 71	80 90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wit								100	200		200	200	
Coolant temperature and site altitu	ıda.				1LA	6 (cast	t-iron)		1LG4	(cast	-iron)			
Coolant temperature	D02				_	_	_	_	1	1	/	1	/	1
_50 to +40 °C	D03				1	/			· /	· /	· /		<i>'</i>	1
Coolant temperature -40 to +40 °C					•		<b>√</b>	<b>√</b>	•	•	•	<b>√</b>	•	
Coolant temperature -30 to +40 °C	D04				✓	1	1	1	✓	1	1	1	1	/
Designs in accordance with standa	ards and spe	ecifications												
Electrical according to NEMA MG1-12	D30				✓	✓	1	1	✓	✓	1	✓	✓	✓
Design according to UL with "Recognition Mark" 16)	D31				1	✓	1	1	✓	✓	1	✓	1	✓
Canadian regulations (CSA) 17)	D40				/	/	/	1	/	/	/	/	1	/
PSE Mark Japan <sup>18)</sup>	D46				1	/	1	_	_	_	_	_	_	_
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30				1	1	1	1	1	1	1	1	1	1
Bearings and lubrication														
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50				✓	✓	1	✓	✓	1	1	1	1	✓
Bearing design for increased cantilever forces <sup>19)</sup>	K20				1	✓	1	1	1	1	1	✓	1	✓
Special bearing for DE and NDE, bearing size	K36				-	-	-	-	1	1	✓	✓	<b>√</b> 20)	<b>√</b> 20)
Regreasing device	K40				1	/	/	1	1	/	/	1		
Located bearing DE	K94				1	1	1	1	1	/	1	1	/	1
Located bearing NDE	L04				1	1	✓							
Insulated bearing cartridge	L27				-	-	-	-	-	-	✓	✓	1	✓
Balance and vibration quantity								_		_	_	_	_	_
Vibration quantity A	1/00					<u> </u>		<u> </u>					<u> </u>	<u> </u>
Vibration quantity B	K02 L68				/	<b>√</b>	<u>/</u>	<u>√</u>	/	<b>✓</b>	<b>√</b>	/	<b>√</b>	√ 
Full key balancing Balancing without key	M37				/	1	1	<u>/</u>	/	<b>√</b>	1	/	✓ ✓	/
Shaft and rotor	IVIST				<b>V</b>	•	<b>V</b>	•						
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors 21)	K04				1	1	1	1	V	1	1	1	✓	✓
Second standard shaft extension <sup>22)</sup>	K16				1	1	1	1	1	/	1	/	1	1
Shaft extension with normal dimensions without featherkey way	K42				✓	✓	1	1	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39				1	1	1	✓	1	1	1	1	1	1
Standard shaft made of non-rusting steel	M65				1	✓	1	1	-	-	-	-	-	-
Non-standard cylindrical shaft extension <sup>23)</sup>	Y55 • and identification code				1	1	1	<b>√</b>	1	1	1	1	1	1
Heating and ventilation	aon code													
Fan cover for textile industry	H17				1	1	1	1	-	-	-	-	-	_
Metal external fan <sup>24)</sup>	K35				1	1	1	1	1	/	/	/	1	<b>√</b>
Anti-condensation heaters for 230 V	K45				1	1	1	1	1	1	✓	1	1	1
Anti-condensation heaters for 115 V	K46				1	1	1	1	1	✓	✓	1	✓	1
Sheet metal fan cover	L36				_	-	-	-	1	/	/	/	1	<b>✓</b>
Separately driven fan with non-standard voltage and/or frequency	<b>Y81</b> • and identification code				-	-	-	-	-	-	1	1	1	/

Special versions	Additional identification code -Z with order code and plain text if required		56	63	frame :	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving	motors wit	h imp	roved	effic	iency	– Cas	t-iron				1LG4						
								1LA6	(cast	-iron)		1LG4	l (cast	-iron)			
Rating plate and extra rating plate																	
Second lubricating plate, supplied loose	B06							<b>√</b>	<b>√</b>	<b>√</b>	✓	1	<b>√</b>	✓	<b>√</b>	<b>√</b>	✓
Second rating plate, loose	K31							✓	✓	✓	1	1	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code							✓	1	1	1	1	1	1	1	✓	1
Extra rating plate with identification codes	Y82 • and identification code							1	1	1	1	1	1	1	1	1	1
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code							1	1	1	1	1	1	1	1	1	1
Packaging, safety notes, documer	tation and te	st cert	ificate	s													
Without safety and commissioning note. Customer's declaration of renouncement required.	B00							0	0	0	0	-	-	-	-	-	-
With one safety and startup guide per box pallet	B01							0	0	0	0	-	-	-	-	-	-
Acceptance test certificate 3.1 according to EN 10204	B02							✓	1	1	✓	1	1	1	1	1	✓
Operating instructions German/English in print	B23							✓	1	1	✓	1	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83							1	1	✓	1	1	1	1	✓	1	✓
Wire-lattice pallet	L99							0	0	0	0	-	-	-	-	-	_
Connected in star for dispatch	M32							✓	1	1	✓	1	✓	✓	✓	✓	1
Connected in delta for dispatch	M33							✓	1	1	✓	1	✓				

□ Standard version
 ○ Without additional charge
 • This order code only determines the price of the version – Additional plain text is required.
 ○ R. Possible on request
 ✓ With additional charge
 Not possible

In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering

Evaluation with appropriate tripping unit (see Catalog LV 1) is recom-

- Possible in combination with order code L44 to L49 or length specification
- in plain text.
- Only the 50 Hz data are indicated on the rating plate.
- Cannot be used for motors in UL version (order code D31). Cannot be used for motors according to CSA approval (order code **D40**) for motor serie 1LG4. The grease lifetime specified in Catalog D 81.1 part 0
- "Introduction" refers to CT 40 °C. When the coolant temperature rises
- by 10K, the grease lifetime or relubrication interval is halved. For frame sizes 100 to 160, do not specify an order code. Order code is only necessary for frame sizes 180 to 315.
- brakes. The order codes listed cannot be combined within the various technologies nor with each other within the same technology system. This applies for: Modular technology

A second shaft extension is not possible. Please inquire for mounted

- Basic versions of "Modular technology" - Combination of special versions "Special technology"
- For 1LG4/1LG6 motors, order codes G17, G26 and H63 frame size 225
- and above can also be combined with all rotary pulse encoders in the "Special technology" range.
- The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake
- supply voltages are possible with order codes C00 and C01.
- <sup>10)</sup> Not possible for motor series 1LG4 for 2-pole motors.
- 11) For 1LG4 motors in low-noise version a second shaft extension and/or mounting of an encoder are not possible.)
- 12) Not possible in combination with rotary pulse encoder HOG 9 D 1024l (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26).
  - Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code G26).
  - Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IPS5, IPS6, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction

(feet located on side or top), it is necessary to relocate the bearing plates

at the drive end (DE) and non-drive end (NDE) so that the condensation

drainage holes situated between the feet on delivery are underneath.

- 15) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cowl <sup>16)</sup> Possible up to 600 V max. Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- Order with voltage code 9 and order code for voltage and frequency.
- The rated voltage is indicated on the rating plate. "Small power motors" with a rated output of up to 3 kW which are exported
- to Japan must bear the PSE marking.
- <sup>19)</sup> Not possible for 2-pole 1LG4 motors, frame size 315 L in vertical types of
- construction; bearings for increased cantilever forces at vibration quantity level A available on request for 1LG4 motors. Not possible for 1LG4
  - motors in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors" - order code K04.
  - <sup>20)</sup> Additional charge for 2-pole motors. With 4-pole to 8-pole motors, standard version. Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for
  - increased cantilever forces, order code K20), brake mounting or encoder mountina. <sup>22)</sup> Possible for motors of frame size 315 and above in vertical types of con-
  - struction or 2-pole for version with second shaft extension on request. Version with protective cover not possible.
  - <sup>23)</sup> When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must
  - be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard

threaded journals, non-standard shaft tolerances, friction welded journals,

- extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE The featherkeys are supplied in every case. For order codes Y55 and K16: - Dimensions D and DA ≤ internal diameter of roller bearing
- (see dimesnion tables under "Dimensions") Dimensions E and EA ≤2 x length E (normal) of the shaft extension
- For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction". <sup>24)</sup> For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combina-

tion with the low-noise version - order code K37 or K38.

Special versions	Additional identification code -Z with order code and plain text if	Mot	or type	frame s	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with inc	reased outpu	ıt – Cas	t-iron	series	1LG4						1LG <sup>4</sup>	l (cast	-iron)			
Motor protection													į			
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11										1	1	✓	✓	1	
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12										1	1	1	1	1	
Motor temperature detection with embedded temperature sensor KTY 84-130 1)	A23										✓	1	1	1	1	
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25										1	1	1	1	1	
Temperature detectors for tripping 1)	A31										1	✓	1	1	✓	
Installation of 3 PT 100 resistance thermometers 1)	A60										1	1	1	✓	1	
Installation of 6 PT 100 resistance thermometers in stator winding 1)	A61										1	1	1	✓	1	
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings 1)	A72										1	1	1	1	1	
Installation of 2 PT 100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings 1)	A78										1	1	1	1	1	
Installation of 2 PT 100 double screwin resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>1)</sup>	A80										1	1	1	1	1	
Motor connection and connection b	ох															
Two-part plate on connection box	K06										_	1	1	1	/	
Connection box on RHS	K09										1	1	/	/	/	
Connection box on LHS	K10										1	/	/	/	/	
Connection box on top, feet screwed on	K11										1	1	1	1	1	
Connection box in cast-iron version	K15										1	✓	✓			
One cable gland, metal	K54										1	✓	✓	✓	1	
Cable gland, maximum configuration	K55										1	✓	✓	✓	1	
Rotation of the connection box through 90°, entry from DE	K83										1	1	✓	✓	1	
Rotation of the connection box through 90°, entry from NDE	K84										1	✓	1	1	✓	
Rotation of connection box through 180°	K85										1	1	✓	✓	1	
Next larger connection box	L00										1	✓	✓	✓	✓	
Undrilled entry plate	L01										0	0	0	0	0	
External earthing	L13															
6 cables protruding, 1.5 m long <sup>2)</sup>	L48										1	/	1	0. R.	0. R.	
6 cables protruding, 3 m long <sup>2)</sup>	L49										1	1	1		0. R.	_
Protruding cable ends – right side 3)	L51										O. R.	0. R.	O. R.	O. R.	0. R.	
Protruding cable ends – left side 3)	L52										O. R.	O. R.	O. R.	O. R.	O. R.	
Auxiliary connection box 1XB3 020	L97										1	/	/	/	/	

Special versions	Additional identification code -Z with order code and plain	Mot	or type	frame s	size											
	text if required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with inci	reased outp						100	112	102	100	100	200	225	230	200	313
Mater connection and connection b	ax (aantinuaa	٦/									1LG4	4 (cast	-iron)			
Motor connection and connection b  Stud terminal for cable connection, accessories pack (3 items)	M46	1)									-	-	-	1	1	
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47										-	-	-	1	1	
Windings and insulation																
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11										✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 155 (F), with increased output 5)	C12										✓	1	1	1	1	
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13										✓	1	1	1	1	
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19										✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % <sup>4)</sup>	C22										1	1	1	1	1	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>4)</sup>	C23										1	1	1	1	1	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>4)</sup>	C24										✓	1	1	1	1	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % <sup>4)</sup>	C25										✓	1	1	1	1	
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26										✓	1	1	1	✓	
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 ● and specified output, CT°C or SA m above sea level										✓	✓	√	<b>√</b>	<b>√</b>	
Colors and paint finish												_	_	_	_	
Standard finish in RAL 7030 stone gray															_	
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y53 ● and standard finish RAL										✓	1	√	√	✓	
Special finish in RAL 7030 stone gray	K26										1	1	1	1	1	
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y54 • and special finish RAL										✓	✓	✓	✓	/	

Special versions	Additional identification code -Z with order code and plain text if		Moto	r type	frame s	size											
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with inc	reased out	put –	Cast	-iron	series	1LG4											
Colors and point finish (continued)												1LG4	(cast-	iron)			
Colors and paint finish (continued) Special finish in special RAL colors:	<b>Y51 •</b> and											./	./	./	/	1	
For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	special finish RAL												Ť	Ť		·	
Offshore special finish	M91											✓	✓	✓	✓	✓	
Sea air resistant special finish	M94											O.R.	0. R.				
Unpainted (only cast iron parts primed)	K23											0	0	0	0	0	
Unpainted, only primed	K24											/	/	/	/	/	
Modular technology - Basic version	ıs <sup>5)</sup>																
Mounting of separately driven fan 6)	G17											1	1	1	1	1	
Mounting of brake 6) 7)	G26											1	1	1	1	/	
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57											1	1	1	1	1	
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58		6)									1	1	1	1	1	
Modular technology – Combinations		ersions	s <sup>b)</sup>														
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder												✓	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	
Mounting of brake and 1XP8 001-1 rotary pulse encoder 7)	H62											✓	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	
Mounting of brake and separately driven fan <sup>6) 7)</sup>	H63											✓	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder 7)	H64											1	/	/	1	1	
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97											✓	✓	✓	✓	✓	
Mounting of brake and 1XP8 001-2 rotary pulse encoder 7)	H98											✓	<b>√</b>	1	<b>✓</b>	<b>✓</b>	
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder 7)	H99											✓	1	1	/	/	
Modular technology - Additional ve	rsions																
Brake supply voltage 24 V DC	C00											1	/	/	/	1	
Brake supply voltage 400 V AC	C01											1	/	/	/	/	
Mechanical manual brake release with lever (no locking)	K82											1	1	1	1	1	
Special technology <sup>5)</sup>																	
Mounting of LL 861 900 220 rotary pulse encoder	H70											✓	1	1	<b>✓</b>	✓	
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72											1	1	1	1	<b>√</b>	
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73											✓	✓	✓	✓	✓	
Prepared for mounting LL 861 900 220	H78											✓	✓	✓	✓	✓	
Prepared for mounting HOG 9 D 1024 I	H79											✓	1	1	<b>✓</b>	✓	
Prepared for mounting HOG 10 D 1024 I	H80											✓	✓	✓	✓	✓	
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15											✓	✓	✓	✓	✓	
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16											1	1	1	✓	1	

Special versions	Additional identification code -Z with order code and plain text if		Moto	r type	frame s	size											
Self-ventilated motors with inc	required	put -	56 Cast	63	71 series	80 1LG4	90	100	112	132	160	180	200	225	250	280	315
Sen-ventuated motors with me	leased out	put –	Cast	-IIOII (	SCI ICS	TLG4						1LG4	1 (cast	-iron)			
Special technology <sup>5)</sup> (continued)													Ì	Ĺ			
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm											✓	1	1	1	1	
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm											✓	✓	✓	✓	1	
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm											1	✓	✓	✓	✓	
Mechanical design and degrees of p	protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction 8)	K17											✓	<b>√</b>	✓	✓	1	
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>9)</sup>	K37											1	1	1	1	1	
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>9)</sup>	K38											1	1	1	1	1	
IP65 degree of protection 10)	K50											1	1	1	1	1	
IP56 degree of protection (non-heavy-sea) 11)	K52											1	1	✓	✓	1	
Condensation drainage holes 12)	L12																
Non-rusting screws (externally)  Earth brushes for converter-fed operation	M27 M44											-	-	-	-	<b>√</b> O. R.	
Mechanical protection for encoder <sup>13)</sup>	M68											1	/	<b>√</b>	<b>√</b>	/	
Coolant temperature and site altitude	de																
Coolant temperature -50 to +40 °C	D02											✓	✓	✓	✓	✓	
Coolant temperature -40 to +40 °C	D03											✓	✓	✓	✓	✓	
Coolant temperature -30 to +40 °C	D04											1	✓	✓	✓	✓	
Designs in accordance with standar	•	cificati	ions														
Electrical according to NEMA MG1-12												1		<b>√</b>			
Design according to UL with "Recognition Mark" 14)	D31											✓	<i>\</i>	<i>\</i>	<i>\</i>	✓ 	
Canadian regulations (CSA) 15) <b>Bearings and lubrication</b>	D40											1	/	/	1	1	
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50											1	1	1	1	1	
Bearing design for increased cantilever forces <sup>16)</sup>	K20											1	1	1	1	1	
Special bearing for DE and NDE, bearing size	K36											1	1	1	1	<b>√</b> 17)	
Regreasing device	K40											1	/	1	1		
Located bearing DE	K94											1	1	✓	✓	1	
Located bearing NDE	L04																
Insulated bearing cartridge	L27											-	-	✓	✓	1	
Balance and vibration quantity Vibration quantity A												_	_	_	_	_	
Vibration quantity B	K02											<u> </u>					
Full key balancing	L68											1	1	1	1	1	
Balancing without key	M37											1	✓	1	1	✓	

	identifica- tion code -Z with order code and plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with inc	reased out	put –	Cast	-iron	series	1LG4											
												1LG4	l (cast	-iron)			
Shaft and rotor																	
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors (8)	K04											1	✓	✓	✓	✓	
Second standard shaft extension <sup>19)</sup>	K16											✓	✓	/	/	1	
Shaft extension with normal dimensions without featherkey way	K42											✓	✓	✓	✓	✓	
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39											✓	1	1	1	1	
Non-standard cylindrical shaft extension <sup>20)</sup>	Y55 • and identification code											1	1	1	1	1	
Heating and ventilation																	
Metal external fan <sup>21)</sup>	K35											✓	1	1	1	1	
Anti-condensation heaters for 230 V	K45											1	/	/	/	/	
Anti-condensation heaters for 115 V	K46											✓	✓	1	1	1	
Sheet metal fan cover	L36											✓	✓	1	1	1	
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code											-	-	1	1	1	
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06											1	1	1	1	1	
Second rating plate, loose	K31											✓	✓	✓	✓	✓	
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code											✓	1	1	1	1	
Extra rating plate with identification codes	Y82 • and identification code											1	1	1	1	1	
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code											1	1	1	1	1	
Packaging, safety notes, documenta	ation and tes	st certi	ificate	:S													
Acceptance test certificate 3.1 according to EN 10204	B02											1	1	1	1	✓	
Operating instructions German/ English enclosed in print	B23											✓	✓	1	1	1	
Type test with heat run for horizontal motors, with acceptance	F83											✓	✓	✓	✓	1	
Connected in star for dispatch	M32											✓	1	1	1	1	
Connected in delta for dispatch	M33											1	1				

Standard version

Special versions

Additional identifica-

Motor type frame size

- Standard version
   Without additional charge
   This order code only determines the price of the version Additional plain text is required.
   O. R. Possible on request
   With additional charge

- Not possible

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recom-In combination with the PTC thermistor option or anti-condensation
- Possible in combination with order code L44 to L49 or length specification in plain text.
- Only the 50 Hz data are indicated on the rating plate. A second shaft extension is not possible. Please inquire for mounted
  - brakes. The order codes listed cannot be combined within the various technologies nor with each other within the same technology system.

heating option, please inquire before ordering.

- This applies for: Modular technologyBasic versions of "Modular technology"

the fan cowl.

- Combination of special versions "Special technology"
- For 1LG4/1LG6 motors, order codes G17, G26 and H63 frame size 225
- and above can also be combined with all rotary pulse encoders in the "Special technology" range. The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake
- supply voltages are possible with order codes C00 and C01. Not possible for motor series 1LG4 for 2-pole motors.
- For 1LG4 motors in low-noise version a second shaft extension and/or mounting of an encoder are not possible.)
- Not possible in combination with rotary pulse encoder HOG 9 D 1024I (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26).
- 11) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code G26).
- 12) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation
- drainage holes situated between the feet on delivery are underneath. 13) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under

- <sup>14)</sup> Possible up to 600 V max. Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- <sup>15)</sup> Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- <sup>16)</sup> Not possible for 2-pole 1LG4 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level A available on request for 1LG4 motors. Not possible for 1LG4 motors in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for
- flange-mounting motors" order code **K04**. 17) Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard version
- 18) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20), brake mounting or encoder mounting.
- <sup>19)</sup> Possible for motors of frame size 315 and above in vertical types of construction or 2-pole for version with second shaft extension on request.
- Version with protective cover not possible. <sup>20)</sup> When motors are ordered that have a longer or shorter shaft extension
  - be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE.

than normal, the required position and length of the featherkey way must

- The featherkeys are supplied in every case. For order codes Y55 and K16: Dimensions D and DA ≤ internal diameter of roller bearing (see dimesnion tables under "Dimensions")
- Dimensions E and EA ≤2 x length E (normal) of the shaft extension For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction". <sup>21)</sup> For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed
  - operation is permitted. The metal external fan is not possible in combination with the low-noise version - order code K37 or K38.

Options or order codes (su		Z is requ															
Special versions	Additional identification code -Z with order code and plain text if required		Motor														
Self-ventilated energy-sav	<u> </u>	with hig	56 b. offic	63 cienc	71 V – C	80	90	100	112 G6	132	160	180	200	225	250	280	315
Sell-ventilated ellergy-sav	ing motors	with hig	II eilic	SIEIIC	y – C	ast-III	JII SEI	ies il	Go			1LG6	6 (cast-	-iron)			
Motor protection													(	,			
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>1)</sup>	A11											✓	1	1	✓	✓	1
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12											✓	✓	1	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 1)	A23											1	1	1	1	1	1
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25											1	✓	✓	1	1	✓
Temperature detectors for tripping 1)	A31											✓	1	1	1	1	1
Installation of 3 PT 100 resistance thermometers 1)	A60											✓	1	✓	1	1	1
Installation of 6 PT 100 resistance thermometers in stator winding <sup>1)</sup>	A61											✓	1	✓	1	1	1
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings 1)												✓	1	1	1	✓	1
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings 1)	A78											✓	1	✓	1	1	1
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings	A80											1	1	<b>√</b>	✓	✓	1
Motor connection and connection	tion box																
Two-part plate on connection box	K06											_	/	1	/	/	/
Connection box on RHS	K09											1	1	✓	1	1	1
Connection box on LHS	K10											✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11											✓	<b>✓</b>	✓	<b>✓</b>	<b>✓</b>	<b>✓</b>
Connection box in cast-iron version	K15											1	✓	✓			
One cable gland, metal	K54											1	/	/	/	✓	/
Cable gland, maximum configuration	K55											✓	✓	✓	<b>√</b>	<b>√</b>	✓
Rotation of the connection box through 90°, entry from DE	K83											✓	<b>√</b>	<b>✓</b>	✓	✓	<b>√</b>
Rotation of the connection box through 90°, entry from NDE	K84											1	<i>'</i>	/	<i>'</i>	<i>'</i>	<i>'</i>
Rotation of connection box through 180°	K85											✓	<b>✓</b>	<b>✓</b>	✓	✓ 	✓ 
Next larger connection box	L00											<b>✓</b>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
Undrilled entry plate	L01											0	0	0	0	0	0
External earthing	L13																

Special versions	Additional identification code -Z with order code and plain text if required		type frame s	20 400	110 1	22 100	100	200	005	050	200	215
Self-ventilated energy-sav		56 ith high effi	63 71 ciency – C	90 100 series 1L		32 160	180	200 (cast-	225	250	280	315
Motor connection and connec	ction box (continu	ued)					ILGO	(casi-	11011)			
6 cables protruding, 1.5 m long <sup>2)</sup>	L48	,					1	1	1	O. R.	O. R.	O. R.
6 cables protruding, 3 m long <sup>2)</sup>	L49						✓	✓	✓	O. R.	O. R.	O. R.
Protruding cable ends – right side <sup>3)</sup>	L51						O. R.	O. R.	O.R.	O.R.	O.R.	O.R.
Protruding cable ends – left side 3)	L52						O. R.	O. R.	O.R.	O. R.	O. R.	O.R.
Auxiliary connection box 1XB3 020	L97						✓	✓	✓	✓	✓	✓
Stud terminal for cable connection, accessories pack (3 items)	M46						-	-	-	1	1	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47						-	-	-	✓	✓	1
Windings and insulation												
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11						✓	1	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output <sup>4)</sup>	C12						✓	1	1	1	1	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13						✓	1	✓	✓	✓	1
Increased air humidity/ temperature with 30 to 60 g water per m <sup>3</sup> of air	C19						1	1	1	1	1	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % <sup>4)</sup>	C22						1	1	1	1	1	1
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % 4)	C23						✓	1	1	<b>√</b>	<b>√</b>	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>4)</sup>	C24						✓	✓	✓	✓	✓	1
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % <sup>4)</sup>	C25						1	1	✓	✓	✓	✓
Increased air humidity/ temperature with 60 to 100 g water per m <sup>3</sup> of air	C26						1	1	1	1	1	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 ● and specified output, CT °C or SA m above sea level						✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT°C or SA m above sea level						✓	<b>√</b>	<b>√</b>	✓	<b>√</b>	<b>√</b>

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size  56 63 71 80 90 100 112 132 160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motors	with high efficiency – Cast-iron series 1LG6	100	200	EEO	200	200	010
			1LG6	(cast-	iron)			
Colors and paint finish Standard finish in RAL 7030				_	_	_	_	_
stone gray								
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y53 • and standard finish RAL		✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>/</b>
Special finish in RAL 7030 stone gray	K26		1	1	1	1	1	✓
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	special finish RAL		<b>V</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>✓</b>	/
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL		✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	1
Offshore special finish	M91		1	1	1	1	1	✓
Sea air resistant special finish	M94 K23		O. R.	0. R. 0				
Unpainted (only cast iron parts primed)			O					
Unpainted, only primed	K24		✓	1	1	1	1	✓
Modular technology – Basic v Mounting of separately driven fan 6)	G17		1	1	1	1	1	1
Mounting of brake <sup>6) 7)</sup>	G26		1	1	1	1	1	1
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57		1	1	1	1	1	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58		1	1	1	1	1	✓
Modular technology - Combin	nations of ba	sic versions <sup>5)</sup>						
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61		1	1	1	1	1	1
Mounting of brake and 1XP8 001-1 rotary pulse encoder 7)	H62		1	1	1	1	1	1
Mounting of brake and separately driven fan 6) 7)	H63		1	1	1	1	1	✓
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder (1)	H64		✓	1	1	1	1	✓
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97		1	1	1	1	1	1
Mounting of brake and 1XP8 001-2 rotary pulse encoder 7)	H98		1	1	1	1	1	1
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder 7)	H99		✓	1	1	1	1	✓

Special versions	Additional identification code -Z with order code and plain text if	Motor type frame size						
Solf ventilated aparay say	required	56 63 71 80 90 100 112 132 160 swith high efficiency – Cast-iron series 1LG6	180	200	225	250	280	315
Sell-verilliated ellergy-sav	ing motors	s with high emclency – Cast-non series 1LG0	1LG6	cast-	iron)			
Modular technology - Addition								
Brake supply voltage 24 V DC	C00		/	/	/	✓	1	<b>√</b>
Brake supply voltage 400 V AC	C01		✓	✓	✓	1	1	1
Mechanical manual brake release with lever (no locking)	K82		✓	1	1	1	✓	<b>√</b>
Special technology 5)								
Mounting of LL 861 900 220 rotary pulse encoder	H70		<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72		✓	✓	✓	1	1	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73		1	✓	✓	1	1	✓
Prepared for mounting LL 861 900 220	H78		1	✓	✓	✓	1	1
Prepared for mounting HOG 9 D 1024 I	H79		1	1	1	1	1	✓
Prepared for mounting HOG 10 D 1024 I	H80		1	1	1	1	1	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15		1	1	1	1	1	1
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16		1	1	1	1	1	1
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm		1	<b>√</b>	<b>√</b>	1	1	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm		1	1	1	1	1	<b>√</b>
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm		1	1	1	1	1	✓
Mechanical design and degree	es of protect	ion						
Drive-end seal for flange- mounting motors with an oil- tightness of up to 0.1 bar Not possible for IM V3 type of construction and 2-pole motors 8)	K17		/	✓	✓	1	/	✓
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>9)</sup>	K37		-	-	-	-	-	-
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>9)</sup>	K38		-	-	-	-	-	-
IP65 degree of protection 10)	K50		1	1	1	1	✓	✓
IP56 degree of protection (non-heavy-sea) 11)	K52		✓	✓	✓	1	✓	<b>✓</b>
Condensation drainage holes <sup>12)</sup>	L12			_	_	0	0	
Non-rusting screws (externally)	M27		1	1	1	1	✓	✓
Earth brushes for converter-fed operation	M44		-	-	-	-	O. R.	O. R.
Mechanical protection for encoder <sup>13)</sup>	M68		✓	1	1	1	✓	✓

Special versions	Additional identification code -Z with order code and plain text if		Motor	r type f	rame s	size											
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motors	with hig	gh effi	cienc	y – C	ast-irc	on seri	ies 1L	G6			11.00	. / +	ine m)			
Coolant temperature and site	altitude											ILG	(cast	-iron)			
Coolant temperature -50 to +40 °C	D02											✓	1	1	1	1	✓
Coolant temperature -40 to +40 °C	D03											1	1	1	1	1	1
Coolant temperature -30 to +40 °C	D04											1	1	1	1	✓	✓
Designs in accordance with st		d specifica	ations														
Premium efficiency class IE3 <sup>24)</sup>	D25	New!										-	-	-	-	-	1
Electrical according to NEMA MG1-12 14)	D30												0	0	0	0	0
Design according to UL with "Recognition Mark" 15)	D31											✓	1	1	1	1	1
Certified for Korea according to KS C4202 <sup>16</sup> )	D33											1	1	✓	✓	1	1
Canadian regulations (CSA) 17)	D40											/	/	1	1	1	1
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30											1	✓	✓	✓	1	1
Bearings and lubrication																	
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50											✓	1	✓	✓	✓	1
Bearing design for increased cantilever forces 18)	K20											1	✓	1	1	1	1
Special bearing for DE and NDE, bearing size 63	K36											1	1	1	1	✓ <sup>19)</sup>	✓ <sup>19)</sup>
Regreasing device	K40											1	1	1	1		
Located bearing DE	K94											✓	✓	✓	✓	✓	✓
Located bearing NDE	L04																
Insulated bearing cartridge  Balance and vibration quantity	L27											-	-	1	1	1	1
Vibration quantity A	y												_	_			
Vibration quantity B	K02											_ /	<u>-</u>				<u>-</u>
Full key balancing	L68											1	✓	✓	✓	✓	✓
Balancing without key	M37											1	1	✓	✓	✓	✓
Shaft and rotor																	
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>20)</sup>	K04											<b>√</b>	✓	<i>\</i>	<i>\</i>	<b>√</b>	✓
Second standard shaft extension <sup>21)</sup>	K16											1	1	✓	✓	✓	1
Shaft extension with normal dimensions without featherkey way	K42											✓	1	✓	✓	1	1
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39											✓	1	1	1	1	1
Non-standard cylindrical shaft extension <sup>22)</sup>	Y55 • and identification code											✓	1	✓	✓	1	✓
Heating and ventilation																	
Metal external fan <sup>23)</sup>	K35											1	1	1	1	1	1
Anti-condensation heaters for 230 V	K45											1	1	1	1	1	1
Anti-condensation heaters for 115 V	K46											✓	✓	✓	✓	✓	✓
Sheet metal fan cover	L36											1	1	1	1	✓	✓
Separately driven fan with non- standard voltage and/or fre- quency	Y81 • and identification code											-	-	✓	✓	1	1

Special versions	Additional identification code -Z with order code and plain text if		Moto	r type f	rame s	size											
	required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-sav	ing motors	with hig	gh eff	icienc	y – C	ast-iro	on ser	ies 1L	G6								
												1LG6	cast	-iron)			
Rating plate and extra rating p	olates																
Second lubricating plate, supplied loose	B06											1	1	1	1	1	1
Second rating plate, loose	K31											✓	✓	1	✓	✓	1
	Y80 • and identification codes											✓	✓	✓	1	✓	1
Extra rating plate with identification codes	Y82 • and identification code											1	1	✓	1	1	1
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code											✓	✓	✓	✓	✓	1
Packaging, safety notes and to	est certificate	es															
Acceptance test certificate 3.1 according to EN 10204	B02											1	1	1	1	1	1
Operating instructions German/ English enclosed in print	B23											1	1	1	✓	1	✓
Type test with heat run for vertical motors, with acceptance	F83											1	1	1	1	1	✓
Connected in star for dispatch	M32											✓	1	✓	✓	✓	1
Connected in delta for dispatch	M33											✓	1				

- □ Standard version
   Without additional charge
   This order code only determines the price of the version Additional plain text is required.
   R. Possible on request
   ✓ With additional charge
   Not possible

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recom-In combination with the PTC thermistor option or anti-condensation
- heating option, please inquire before ordering. Possible in combination with order code L44 to L49 or length specification
- in plain text. Only the 50 Hz data are indicated on the rating plate.
- A second shaft extension is not possible. Please inquire for mounted brakes. The order codes listed cannot be combined within the various technologies nor with each other within the same technology system. This applies for:
  - Modular technologyBasic versions of "Modular technology"

  - Combination of special versions Exception: For frame size 225 and above, the options for mounting a
  - brake (order code G26), separately driven fan (order code G17) or brake and separately driven fan (order code H63) can be combined with the options or rotary pulse encoders of the "Special technology" range. For 1LG4/1LG6 motors, order codes G17, G26 and H63 frame size 225 and above can also be combined with all rotary pulse encoders in the
- "Special technology" range. The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake
- supply voltages are possible with order codes **C00** and **C01**.
- Not possible for motor series 1LG6 for 2-pole motors. Not necessary for 1LG6 motors because these motors are already noise
- optimized. <sup>10)</sup> Not possible in combination with rotary pulse encoder HOG 9 D 1024I (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26)
- Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code G26).
- Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation
- drainage holes situated between the feet on delivery are underneath. 13) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cowl.

- <sup>14)</sup> For the EPACT standard version (no order code required).
- 15) Possible up to 600 V max. Order with voltage code 9 and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- 16) For Korea are certified: - 2-pole motors ≤0.75 kW
  - 4-pole motors ≤0.75 kW
  - 6-pole motors ≤0.75 kW
- <sup>17)</sup> Order with voltage code **9** and order code for voltage and frequency.
- The rated voltage is indicated on the rating plate. Not possible for 2-pole 1LG6 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B available on request for 1LG6 motors. Not possible for 1LG6
- motors in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors" - order code K04. Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard
- version. Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for
- increased cantilever forces, order code K20), brake mounting or encoder mounting. <sup>21)</sup> Possible for motors of frame size 315 and above in vertical types of
- construction or 2-pole for version with second shaft extension on request. Version with protective cover not possible. <sup>22)</sup> When motors are ordered that have a longer or shorter shaft extension
- than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE.
  - The featherkeys are supplied in every case. For order codes Y55 and K16: - Dimensions D and DA ≤ internal diameter of roller bearing (see dimesnion tables under "Dimensions") Dimensions E and EA ≤2 x length E (normal) of the shaft extension
- For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction". <sup>23)</sup> For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combina
  - tion with the low-noise version order code K37 or K38. <sup>24)</sup> Not possible for motor series 1LG6, 8-pole version.

Options or order codes (su	upplement	-Z is req	uired)														
Special versions	Additional identification code -Z with order code and plain text if required		Motor t				00	100	110	122	160	100	200	225	250	200	015
Self-cooled motors without	<u> </u>	fan – Alı		63 1 ser	71 ies 11	80 P7 au	90 ad 11	100 P5	112	132	160	180	200	225	250	280	315
Sch-cooled motors withou	at external	Ian Aic		1LP7		Li / ai	IG IL					1LP5					
					ninum	)							ninum)				
Motor protection																	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11			✓ 	<i>,</i>	<i>,</i>	<i>,</i>	<i>,</i>	<i>,</i>	<i>,</i>	/	<i>y</i>	✓ 				
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12			✓	1	✓	✓	✓	1	✓	✓	1	1				
Motor temperature detection with embedded temperature sensor KTY 84-130	A23			✓	✓	1	✓	1	✓	✓	1	V	✓				
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25			✓	✓	1	✓	1	✓	✓	1	V	✓				
Temperature detectors for tripping <sup>1)</sup>	A31			✓	1	1	✓	1	1	1	1	1	1				
Installation of 3 PT 100 resistance thermometers 1)	A60			-	-	-	-	✓	✓	✓	✓	1	1				
Motor connection and connection																	
ECOFAST motor plug Han-Drive 10e for 230 VA/400 VY <sup>2)</sup>	G55			1	✓	1	✓	1	1	1	-	-	-				
ECOFAST motor plug EMC Han-Drive 10e for 230 VΔ/400 VY <sup>3)</sup>	G56			<b>√</b>	✓	1	✓	✓	✓	✓	-	-	-				
Connection box on RHS	K09			_	-	✓	<b>√</b>	✓	✓	<b>√</b>	✓	/	✓				
Connection box on LHS	K10					<u>/</u>	1	<u>/</u>	<u>/</u>	√ 	<b>√</b>	/	<b>√</b>				
One cable gland, metal  Cable gland, maximum	K54 K55			<u>/</u>	✓ ✓	✓ ✓	✓ ✓	<u>/</u>	✓ ✓	✓ ✓	<u>✓</u>	√ ✓	✓ ✓				
configuration				√ ✓							<u> </u>						
Rotation of the connection box through 90°, entry from DE					<i>'</i>		<i>'</i>	<i>\</i>	<i>'</i>	✓ 		1	1				
Rotation of the connection box through 90°, entry from NDE				✓ 	/	<i>\</i>	<i>\</i>	<i></i>	/	<i>'</i>	<i>\</i>	/	<b>✓</b>				
Rotation of connection box through 180°	K85			✓ 	<b>✓</b>	<b>√</b>		0	0	0	0	/	<i>\</i>				
Next larger connection box	L00				-	-		-	-	-	-	1	<b>√</b>				
External earthing 3 cables protruding,	L13			<u>/</u>	✓ ✓	1	✓ ✓	<i>/</i>	1	✓ ✓	1	✓ O B	<b>√</b> O. R.				
0.5 m long <sup>4)</sup>																	
3 cables protruding, 1.5 m long <sup>4)</sup>	L45			<b>√</b>	<b>✓</b>	<b>√</b>			<b>✓</b>	<b>√</b>	<b>√</b>		O. R.				
6 cables protruding, 0.5 m long <sup>4)</sup>	L47			✓ 	✓	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>		O. R.				
6 cables protruding, 1.5 m long <sup>4)</sup>	L48			✓	✓	<b>✓</b>	<b>√</b>	<b>✓</b>	✓	✓	<b>✓</b>	1	<b>✓</b>				
6 cables protruding, 3 m long <sup>4)</sup>	L49			-	-	-	-	-	-	-	-	-	-				
Connection box on NDE	M64			✓	1	✓	1	✓	✓	✓	✓	✓	✓				
Terminal strip for main and auxiliary terminals	M69			✓	1	1	1	-	-	-	-	-	-				
Windings and insulation																	
Increased air humidity/temperature with 30 to 60 g water per m <sup>3</sup> of air	C19			<i></i>	/	<b>/</b>			/	<b>√</b>	/	<b>/</b>	1				
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26			1	✓	1	✓	1	1	✓	✓	1	1				

Special versions	Additional identification code -Z with order code and plain text if	Motor	type fi	rame si	ze											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors withou	it external	fan – Aluminur			P7 an	d 1LP	5									
			1LP7	ninum)							1LP5	inum)				
Colors and paint finish			(alali								(aran					
Special finish in RAL 7030																
stone gray Special finish in other standard	VEA a and		1			/	,	/	/	/	1	/				
RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	special finish RAL		•	•	•	V	V	•	•	•	•	v				
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0	Y51 • and special finish RAL		1	1	1	1	1	1	<b>√</b>	√	V	1				
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005	Y53 • and standard finish RAL		-	_	_	_	-	-	-	-	-	-				
Sea air resistant special finish	M94		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.				
Unpainted (only cast iron parts primed)	K23		0	0	0	0	0	0	0	0	0	0				
Unpainted, only primed	K24		1	/	/	/	/	/	/	1	1	1				
Mechanical design and degree		tion	•	_	_	•	•	•	•	•						
Drive-end seal for flange- mounting motors with an oil- tightness of up to 0.1 bar <sup>5)</sup>	K17		✓	1	1	✓	✓	1	1	1	1	✓				
With two additional eyebolts for IM V1/IM V3	K32		-	-	-	-	-	-	-	-	1	1				
IP65 degree of protection	K50		1	1	1	1	1	/	1	/	1	1				
IP56 degree of protection	K52		1	1	1	1	1	1	1	1	1	1				
(non-heavy-sea)	1.00		,	,	,	,	,	,	,	,	,	,				
Vibration-proof version  Condensation drainage holes 6)	L03		✓ ✓	<u>✓</u>	<u>✓</u>	✓ ✓	1	✓ ✓	✓ ✓	1	√ √	✓ ✓				
Non-rusting screws (externally)			1	1	/	1	/	1	/	1	1	1				
Coolant temperature and site			•	•	•	•	•	•	•	•	V	•				
Coolant temperature	D03		1	1	1	1	1	1	1	1	1	1				
-40 to +40 °C Coolant temperature	D04		1	1	1	1	1	<b>√</b>	<b>✓</b>	<b>✓</b>	1	1				
-30 to +40 °C	andarda an	d anasifiaatiana														
Designs in accordance with st Design according to UL with "Recognition Mark" 7)	D31	a specifications	1	1	1	1	1	1	1	1	1	1				
Canadian regulations (CSA) 8)	D40		1	1	1	1	1	1	1	1	1	1				
PSE Mark Japan <sup>9)</sup>	D46		1	1	1	1	1	1	1	-	-	-				
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		-	-	-	-	1	1	1	1	1	1				
Bearing design for increased cantilever forces	K20		-	-	-	-	1	<b>√</b>	✓	✓	1	1				
Regreasing device	K40		_	_	_	_	1	1	1	1	1	1				
Located bearing DE	K94		1	1	1	1	1	1	/	1	1	1				
Located bearing NDE	L04		1	1	1	1	1	1	1		_	_				

Special versions	Additional identification code -Z with order code and plain text if	Mot	or type	frame :	size											
	required	56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors withou	ut external	fan – Alumin	um se	ries 1	LP7 a	nd 1L	P5									
			1LP		,						1LP5					
Balance and vibration quantit	v		(alu	minum	,						(aluli	ninum)				
Vibration quantity A	y			_	_		_	_								
Vibration quantity B	K02		/								/					
Full key balancing	L68		1	/	1	1	/	/	1	/	1	/				
Balancing without key	M37		1	/	/	/	/	/	/	1	1	/				,
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>10</sup> )	K04		1	1	✓	✓	1	✓	✓	1	1	1				
Second standard shaft extension	K16		1	✓	1	✓	✓	1	1	✓	1	✓				
Shaft extension with normal dimensions without featherkey way	K42		<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<i>\</i>	<b>√</b>	<b>√</b>	<b>√</b>	1	<b>√</b>				
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	✓	✓	✓	✓	✓	✓	✓	1	✓				
Standard shaft made of non- rusting steel	M65		-	-	✓	✓	✓	✓	✓	✓	1	✓				
Non-standard cylindrical shaft extension <sup>11</sup> )	Y55 • and identification code		<b>√</b>	<b>√</b>	✓	✓	1	1	<b>✓</b>	<b>√</b>	1	<b>✓</b>				
Heating and ventilation																
Anti-condensation heaters for 230 V	K45		1	1	/	✓	1	1	1	1	1	1				
Anti-condensation heaters for 115 V	K46		1	1	1	1	1	1	1	1	1	1				
Rating plate and extra rating p	olates															
Second lubricating plate, supplied loose	B06		-	-	-	-	✓	✓	✓	✓	✓	✓				
Second rating plate, loose	K31		1	✓	✓	1	✓	✓	✓	✓	1	✓				
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		<b>√</b>	1	✓	1	1	1	1	<b>√</b>	1	/				
Extra rating plate with identification codes	Y82 • and identification code		1	✓	✓	✓	1	✓	1	1	1	1				
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		1	✓	1	1	1	1	1	1	1	1				
Packaging, safety notes and t		es														
Without safety and commissioning note. Customer's declaration of renouncement required.	B00		-	0	0	0	0	0	0	0	-	-				
With one safety and startup guide per box pallet	B01		-	0	0	0	0	0	0	0	-	-				
Acceptance test certificate 3.1 according to EN 10204	B02		1	✓	1	✓	1	1	1	✓	1	✓				
Operating instructions German/English in print	B23		1	1	1	1	1	1	1	1	1	1				
Type test with heat run for verti- cal motors, with acceptance	F83		1	✓	1	✓	✓	1	1	✓	1	✓				
Wire-lattice pallet	L99		0	0	0	0	0	0	0	0	0	-				
Connected in star for dispatch	M32		1	1	1	1	1	1	1	/	1	/				
Connected in delta for dispatch	M33		1	1	1	1	1	1	1	✓	1	1				_
<ul> <li>Standard version</li> <li>Without additional ch</li> <li>This order code only Additional plain text i</li> <li>O. R. Possible on request</li> </ul>	determine	s the price of	the ve	ersion	_											

- O. R. Possible on request
  ✓ With additional charge
- Not possible

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
  - Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VA/400 VY and special voltage with voltage code 9 and order code L1U (400 VA). The following order codes cannot be used in combination with the ECOFAST plugs, order code G55: A12, C18, D31, D40, G50, H15, H17, H62, H63, H64, H98, H99, K04, K15, K16, K34, K35, K40, K45, K46,
  - K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.

    Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VΔ/400 VY and special voltage with voltage code 9 and order code L1U (400 VΔ). The following order codes cannot be used in combination with the ECOFAST plugs, order code G56: A12, A23, A31, C00, C18, D31, D40, G50, H15,
- H17, H90, H91, H92, H93, H94, H95, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.

  4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 5) Not possible for type of construction IM V3.
- Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.

- Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- The rated voltage is indicated on the rating plate without voltage range.

  "Small power motors" with a rated output of up to 3 kW which are exported.
- "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- to Japan must bear the PSE marking.

  10) Can be combined with deep-groove bearings of series 60..., 62... and 63...

  Not possible in combination with parallel roller bearings (e.g. bearings for
  - Can be combined with deep-groove bearings of series 60..., 62... and 63...
     Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
     When motors are ordered that have a longer or shorter shaft extension
- than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The featherkeys are supplied in every case. For order codes Y55 and K16:
  - Dimensions D and DA ≤ internal diameter of roller bearing (see dimesnion tables under "Dimensions")
- Dimensions E and EA ≤2 x length E (normal) of the shaft extension
   For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".

Options or order codes (su	upplement	-Z is required)											
Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size											
Colf cooled materia withou	· ·	56 63 71 80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors withou	ut externai	fan – Cast-iron series 1LP4						11 D/	(cast-	iron)			
Motor protection								1674	(cast-	1011)			
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11							1	1	1	1	1	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm 1)	A12							1	1	1	1	1	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>1)</sup>	A23							✓	1	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25							✓	1	✓	✓	1	✓
Temperature detectors for tripping 1)	A31							1	✓	1	1	1	1
Installation of 3 PT 100 resistance thermometers 1)	A60							1	1	1	1	1	1
Installation of 6 PT 100 resistance thermometers in stator winding 1)	A61							✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings <sup>1)</sup>								✓	1	1	✓	1	✓
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings 1)	A78							1	1	1	1	1	1
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings	A80							1	1	✓	✓	1	1
Motor connection and connec	tion box												
Two-part plate on connection box	K06							-	1	1	1	1	1
Connection box on RHS	K09							1	1	1	1	✓	✓
Connection box on LHS	K10							1	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11							1	1	1	1	✓	✓
One cable gland, metal	K54							1	/	/	/	1	/
Cable gland, maximum configuration	K55							1	✓	✓	1	1	1
Rotation of the connection box through 90°, entry from DE	K83							1	1	1	1	1	✓
Rotation of the connection box through 90°, entry from NDE	K84							1	1	1	1	1	1
Rotation of connection box through 180°	K85							1	1	1	1	1	1
Next larger connection box	L00							1	1	1	1	1	1
External earthing	L13												
6 cables protruding, 1.5 m long <sup>2)</sup>	L48							1	1	1	O. R.	O. R.	O. R.
6 cables protruding, 3 m long <sup>2)</sup>	L49							1	1	1	O. R.	O. R.	O. R.
Protruding cable ends – right side <sup>3)</sup>	L51							O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side <sup>3)</sup>	L52							O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97							1	1	1	✓	1	✓

Motor connection and connection box (continued)   M46	Special versions	Additional identification code -Z with order code and plain text if required				rame siz		00	100	110	100	100	100	200	205	250	200	015
Mate	Self-cooled motors withou		fan – Ca	56 ast-iror	63 n <b>se</b> rie		80 4	90	100	112	132	160	180	200	225	250	280	315
March	Motor connection and connec	ction box (co	ntinued)										ILP4	(cast-	iron)			
Saddle ferminal for connection without cable light, accessories pack (6 terms)   Williams and insultation   Temperature class 155 (F), class c	Stud terminal for cable connection, accessories pack	,											-	-	-	1	1	1
Temperature class 156 (F), with service factor (SP)	Saddle terminal for connection without cable lug, accessories	M47											-	-	-	1	1	1
Used acc. to 156 (F)   With service face 156 (F)   C12	Windings and insulation																	
Used acc. to 156 (F), with Increased an Experience (Lass 156 (F), used acc. to 155 (F), with Increased and Inmited (Lass 156 (F)), used acc. to 155 (F), with Increased and Inmited (Lass 156 (F)), used acc. to 155 (F), with Increased and Inmited (Lass 156 (F)), used acc. to 150 (G), used acc. to 150 (G), used acc. to 150 (G), used acc. to 150 (F), u	used acc. to 155 (F),	C11											1	1	1	1	1	✓
Case	used accito 155 (F)	C12											1	1	1	1	1	✓
temperature, with 30 is 60 g water per m" of air Increased air humidity" of the per m" of air Increased air humidity" of the per m" of air Increased air humidity" of the per m" of air Increased colorant temperature and/or site altitude and/	Temperature class 155 (F), used acc. to 155 (F), with	C13											✓	✓	✓	✓	✓	✓
temperature (with 60 to 100 g water) per mor of air at 200 and steep per mor of air and or of air and or of air and or site altitude and/or site altitude an	temperature with 30 to 60 g	C19											✓	1	1	1	1	✓
used acc. to 130 (B), with increased coolant temperature and/or site altitude         specified output, CT. "C or SA	temperature with 60 to 100 g	C26											✓	1	1	1	1	✓
used acc. to 155 (F), other requirements         specified output, CT. *C or SA m above sea level           Colors and paint finish         Standard finish in RAL 703           Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6011, 6019, 6011, 6019, 6011, 6019, 6011, 6019, 6011, 6019, 6019, 6011, 6019, 6019, 6011, 6019,	used acc. to 130 (B), with increased coolant temperature	specified output, CT °C or SA m above sea											✓	✓	✓	✓	✓	/
Standard finish in RAL 7030   Stone gray   Y53 • and standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5017, 5018, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7012, 7031, 7032, 7033, 7035, 9001, 9002, 9005   Y54 • and special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005   Y54 • and special finish in special RAL colors: RAL colors: RAL colors, see "Special finish in special RAL colors and	used acc. to 155 (F),	specified output, CT °C or SA m above sea											✓	1	✓	✓	✓	1
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5009, 5010, 9012, 9005   Special finish in RAL 7030 stone gray   Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5009, 5010, 9002, 9005   Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 5019, 6011, 6019,	•																	
Standard RAL colors:   RAL colors:   AL colors:   AL colors:   AL colors:	stone gray	VE2 a and																
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005   Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0   Offshore special finish   M91   O. R. O.	standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035,	standard finish											•	•	•	•	•	V
RÂL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3000, 5007, 5007, 5007, 5007, 5007, 5007, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005		K26											✓	1	1	1	1	✓
colors: For RAL colors, see "Special finish in special RAL colors" on Catalog D 81.1 part 0  Offshore special finish  M91  Sea air resistant special finish  Unpainted (only cast iron parts primed)  K23  Special finish  M94  O. R. O. R. O. R. O. R. O. R. O. R. O. O	RÅL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032,	special finish											<b>J</b>	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	/
Offshore special finish M91  Sea air resistant special finish M94  Unpainted (colly cast iron parts primed)  W1	colors: For RAL colors, see "Special finish in special RAL	special finish											1	1	1	1	1	1
Unpainted K23 O O O O O O O O O O O O O O O O O O O													1	1	1	1	1	1
(only cast iron parts primed)	Sea air resistant special finish	M94											O. R.	O. R.	0. R.	0. R.	0. R.	O. R.
		K23											0	0	0	0	0	0
Unpainted, only primed K24	Unpainted, only primed	K24											1	1	1	1	1	1

Special versions	Additional identification code -Z with order code and plain text if	Motor type frame size						
Self-cooled motors withou	required	56 63 71 80 90 100 112 132 160 fan – Cast-iron series 1LP4	180	200	225	250	280	315
			1LP4 (cast-iron)					
Mechanical design and degree Drive-end seal for flange-	es of protect K17	ion	1	1	1	1	1	1
mounting motors with an oil- tightness of up to 0.1 bar Not possible for IM V3 type of construction <sup>5)</sup>	KI7		v	v	V	V	V	•
IP65 degree of protection	K50		1	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52		✓	✓	✓	✓	✓	✓
Condensation drainage holes <sup>6)</sup>	L12			0	0	0		_
Non-rusting screws (externally)	M27		1	1	1	1	✓	1
Coolant temperature and site	altitude							
Coolant temperature -50 to +40 °C	D02		1	1	1	1	1	✓
Coolant temperature -40 to +40 °C	D03		1	1	1	1	1	✓
Coolant temperature -30 to +40 °C	D04		1	1	1	1	1	✓
Designs in accordance with s	tandards and	I specifications						
Design according to UL with "Recognition Mark" 7)	D31		1	1	1	1	1	✓
Canadian regulations (CSA) 8)	D40		1	1	1	1	1	✓
Bearings and lubrication					_	_	_	
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		/	/	/	/	1	/
Bearing design for increased cantilever forces 9)	K20		1	1	1	✓	✓	✓
Special bearing for DE and NDE, bearing size	K36		1	1	1	1	✓ <sup>10)</sup>	✓ <sup>10)</sup>
Regreasing device	K40		1	✓	1	1		
Located bearing DE	K94		1	✓	✓	✓	✓	✓
Located bearing NDE	L04							
Insulated bearing cartridge	L27		-	-	✓	✓	1	✓
Balance and vibration quantity	У		_	_	_	_	_	_
Vibration quantity A Vibration quantity B	K02		/		<u> </u>	/	<u> </u>	/
Full key balancing	L68		/			· /	· /	<u> </u>
Balancing without key	M37		1	1	1	/	/	1
Shaft and rotor								
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors 11)	K04		1	✓	✓	1	✓	1
Second standard shaft extension <sup>12)</sup>	K16		1	1	1	1	1	1
Shaft extension with normal dimensions without featherkey way	K42		✓	✓	1	1	1	1
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	1	1	1	1	1
Non-standard cylindrical shaft extension <sup>13)</sup>	Y55 • and identification code		✓	✓	1	1	1	1
Heating and ventilation								
Anti-condensation heaters for 230 V	K45		1	✓	✓	1	1	✓
Anti-condensation heaters for 115 V	K46		1	1	1	1	✓	1

	tion code -Z with order code and plain text if required		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-cooled motors withou	ıt external	fan – Ca	ıst-iroı	n seri	es 1L	P4												
												1LP4 (cast-iron)						
Rating plate and extra rating p	lates																	
Second lubricating plate, supplied loose	B06											✓	✓	✓	✓	✓	1	
Second rating plate, loose	K31											1	✓	✓	✓	✓	/	
Extra rating plate or rating plate with deviating rating plate data	<b>Y80</b> • and identification code											1	1	1	1	1	1	
Extra rating plate with identification codes	Y82 • and identification code											1	1	1	1	1	1	
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code											1	✓	✓	✓	✓	1	
Packaging, safety notes, docu	mentation a	nd test c	ertificat	tes														
Acceptance test certificate 3.1 according to EN 10204	B02											✓	1	1	1	1	1	
Type test with heat run for vertical motors, with acceptance	F83											✓	✓	✓	✓	1	✓	
Connected in star for dispatch	M32											1	1	1	1	1	1	
Connected in delta for dispatch	M33											1	/					
Standard version  Without additional ch																		

Special versions

- This order code only determines the price of the version Additional plain text is required.

Additional

identifica-

- O. R. Possible on request
- With additional charge
- Not possible

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recom-
- In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- Possible in combination with order code L44 to L49 or length specification in plain text.
- Only the 50 Hz data are indicated on the rating plate.
- Not possible for motor series 1LP4 for 2-pole motors.
  - Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation
- drainage holes situated between the feet on delivery are underneath. Possible up to 600 V max. Order with voltage code 9 and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- Order with voltage code 9 and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- Not possible for 2-pole 1LP4 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B available on request for 1LP4 motors. Not possible for 1LP4 motors in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flangemounting motors" - order code K04.

- <sup>10)</sup> Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard
- 11) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 12) Possible for motors of frame size 315 and above in vertical types of construction or 2-pole for version with second shaft extension on request.
- Version with protective cover not possible. <sup>13)</sup> When motors are ordered that have a longer or shorter shaft extension
- than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square jour-
  - The featherkeys are supplied in every case. For order codes Y55 and K16: - Dimensions D and DA ≤ internal diameter of roller bearing
  - (see dimesnion tables under "Dimensions") Dimensions E and EA ≤2 x length E (normal) of the shaft extension For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".

nals), hollow shafts. Valid for non-standard shaft extensions DE or NDE