

## 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 11th position of the Order No.	Additional identification code 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 S/M	315 L
Self-ventilated motors in Zone 1 with type of protection “e” – Aluminum series 1MA7																		
			1MA7 (aluminum)															
Voltage at 50 Hz																		
220 VΔ/380 VY (209 ... 231 VΔ/361 ... 399 VY); 50 Hz output <sup>1)</sup>	9	L1R		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
230 VΔ (218 ... 242 VΔ); 50 Hz output <sup>1)</sup>	9	L1E		○	○	○	○	○	○	○	○	○	○					
380 VΔ/660 VY (361 ... 399 VΔ/627 ... 693 VY); 50 Hz output <sup>1)</sup>	9	L1L		–	✓	✓	✓	✓	✓	✓	✓	✓	✓					
415 VY (394 ... 436 VY); 50 Hz output <sup>1)</sup>	9	L1C		✓ <sup>2)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓					
415 VΔ (394 ... 436 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		–	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Voltage at 60 Hz <sup>3)</sup>																		
220 VΔ/380 VY; 50 Hz output	9	L2A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
380 VΔ/660 VY; 50 Hz output	9	L2C		✓ <sup>4)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓					
440 VY; 50 Hz output	9	L2Q		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
440 VΔ; 50 Hz output	9	L2R		–	✓	✓	✓	✓	✓	✓	✓	✓	✓					
460 VY; 50 Hz output	9	L2S		✓ <sup>2)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓					
460 VΔ; 50 Hz output	9	L2T		–	✓	✓	✓	✓	✓	✓	✓	✓	✓					
575 VY; 50 Hz output	9	L2U		✓ <sup>4)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓					
575 VΔ; 50 Hz output	9	L2V		–	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Non-standard voltage and/or frequencies																		
Non-standard winding for vol- tages between 200 and 690 V (voltages outside this range are available on request) <sup>5)</sup>	9	L1Y •		✓	✓	✓	✓	✓	✓	✓	✓	✓						
Self-ventilated motors in Zone 1 with type of protection “e” – Cast-iron series 1MA6																		
			1MA6 (cast-iron)															
Voltage at 50 Hz																		
220 VΔ/380 VY (209 ... 231 VΔ/361 ... 399 VY); 50 Hz output <sup>1)</sup>	9	L1R								✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ (218 ... 242 VΔ); 50 Hz output <sup>1)</sup>	9	L1E								○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (361 ... 399 VΔ/627 ... 693 VY); 50 Hz output <sup>1)</sup>	9	L1L								✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (394 ... 436 VY); 50 Hz output <sup>1)</sup>	9	L1C								✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ (394 ... 436 VΔ); 50 Hz output <sup>1)</sup>	9	L1D								✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage at 60 Hz <sup>3)</sup>																		
220 VΔ/380 VY; 50 Hz output	9	L2A								✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C								✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q								✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 50 Hz output	9	L2R								✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S								✓	✓	✓	✓	✓	○	○	○	–
460 VΔ; 50 Hz output	9	L2T								✓	✓	✓	✓	✓	○	○	○	○
575 VY; 50 Hz output	9	L2U								✓	✓	✓	✓	✓	○	○	○	–
575 VΔ; 50 Hz output	9	L2V								✓	✓	✓	✓	✓	○	○	○	○
Non-standard voltage and/or frequencies																		
Non-standard winding for vol- tages between 200 and 690 V (voltages outside this range are available on request) <sup>5)</sup>	9	L1Y •								✓	✓	✓	✓	✓	✓	✓	✓	✓

○ Without additional charge  
✓ With additional charge  
– Not possible

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

Footnotes, see Page 2.

Special versions	Voltage code 11th position of the Order No.	Additional identification code 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 S/M	315 L
Self-ventilated motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																		
			1MJ6 (cast-iron)										1MJ7 (cast-iron)					
Voltage at 50 Hz																		
220 VΔ/380 VY (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output <sup>1)</sup>	9	L1R			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ (220 ... 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E			○	○	○	○	○	○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output <sup>1)</sup>	9	L1L			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VY (395 ... 435 VY); 50 Hz output <sup>1)</sup>	9	L1C			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ (395 ... 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output	9	L2B			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 60 Hz output	9	L2D			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 50 Hz output	9	L2Q			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output	9	L2W			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 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			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○
460 VΔ; 50 Hz output	9	L2T			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
460 VΔ; 60 Hz output	9	L2F			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○
575 VY; 50 Hz output	9	L2U			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output	9	L2L			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 60 Hz output	9	L2M			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○
Non-standard voltage and/or frequencies																		
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>5)</sup>	9	L1Y •			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–

○ Without additional charge

✓ With additional charge

– Not possible

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

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

<sup>2)</sup> For motors 1MA7 060-4 (motor series 1MA7 frame size 63, 4-pole) not possible.

<sup>3)</sup> Special certification is required for 60 Hz.

<sup>4)</sup> For motors 1MA7 060-2, 1MA7 060-4 and 1MA7 063-4 (motor series 1MA7 frame size 63, 2- and 4-pole) not possible.

<sup>5)</sup> Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																		
			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>1)</sup>					
Voltage at 50 Hz																		
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output <sup>2)</sup>	9	L1R		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
230 VΔ (220 ... 240 VΔ); 50 Hz output <sup>2)</sup>	9	L1E		○	○	○	○	○	○	○	○	○	○	○				
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output <sup>2)</sup>	9	L1L		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
415 VY (395 ... 435 VY); 50 Hz output <sup>2)</sup>	9	L1C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
415 VΔ (395 ... 435 VΔ); 50 Hz output <sup>2)</sup>	9	L1D		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
400 VY (380 ... 420 VY); 50 Hz output <sup>2)</sup>	9	L1A		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ (380 ... 420 VΔ); 50 Hz output <sup>2)</sup>	9	L1B		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ (460 VΔ bei 60 Hz) (380 ... 420 VΔ); 50 Hz output <sup>2)</sup>	9	L1U		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ 87 Hz output (4-pole to 8-pole only) <sup>3)</sup>	9	L3A		○	○	○	○	○	○	○	○	○	○	○				
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
220 VΔ/380 VY; 60 Hz output	9	L2B		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 50 Hz output	9	L2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 60 Hz output	9	L2D		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 50 Hz output	9	L2Q		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 60 Hz output	9	L2W		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VΔ; 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		○	○	○	○	○	○	○	○	○	○	○				
460 VΔ; 50 Hz output	9	L2T		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
460 VΔ; 60 Hz output	9	L2F		○	○	○	○	○	○	○	○	○	○	○				
575 VY; 50 Hz output	9	L2U		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VY; 60 Hz output	9	L2L		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 50 Hz output	9	L2V		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 60 Hz output	9	L2M		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Non-standard voltage and/or frequencies																		
Non-standard winding for vol- tages between 200 V and 690 V (voltages outside this range are available on request) <sup>4)</sup>	9	L1Y •		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

○ Without additional charge

✓ With additional charge

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

<sup>1)</sup> Zone 2 is not possible for motor series 1LA5 and motor series 1LA7 for frame size 56.

<sup>2)</sup> For Zones 21 and 22, for order codes **L1C, L1D, L1E, L1L, L1R, L1U, L1B** and **L1A** a rated voltage range is also marked on the rating plate.

<sup>3)</sup> The rating data for converter-fed operation is also provided in a table on the rating plate.

<sup>4)</sup> Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9																		
			1LA9 (aluminum)															
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		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
230 VΔ (220 ... 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E		○	○	○	○	○	○	○	○	○	○	○				
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output <sup>1)</sup>	9	L1L		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
415 VY (395 ... 435 VY); 50 Hz output <sup>1)</sup>	9	L1C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
415 VΔ (395 ... 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
400 VY (380 ... 420 VY); 50 Hz output <sup>1)</sup>	9	L1A		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ (460 VΔ bei 60 Hz) (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U		○	○	○	○	○	○	○	○	○	○	○				
400 VΔ 87 Hz output (4-pole to 8-pole only) <sup>2)</sup>	9	L3A		○	○	○	○	○	○	○	○	○	○	○				
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
220 VΔ/380 VY; 60 Hz output	9	L2B		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 50 Hz output	9	L2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 60 Hz output	9	L2D		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 50 Hz output	9	L2Q		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 60 Hz output	9	L2W		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VΔ; 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		○	○	○	○	○	○	○	○	○	○	○				
460 VΔ; 50 Hz output	9	L2T		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
460 VΔ; 60 Hz output	9	L2F		○	○	○	○	○	○	○	○	○	○	○				
575 VY; 50 Hz output	9	L2U		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VY; 60 Hz output	9	L2L		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 50 Hz output	9	L2V		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 60 Hz output	9	L2M		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Non-standard voltage and/or frequencies																		
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>3)</sup>	9	L1Y •		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

○ Without additional charge

✓ With additional charge

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

<sup>1)</sup> For Zones 21 and 22, for order codes **L1C**, **L1D**, **L1E**, **L1L**, **L1R**, **L1U**, **L1B** and **L1A** a rated voltage range is also marked on the rating plate.

<sup>2)</sup> The rating data for converter-fed operation is also provided in a table on the rating plate.

<sup>3)</sup> Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions	Voltage code 11th position of the Order No.	Additional identification code 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 S/M	315 L
Self-ventilated motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4																		
			1LA6 (cast-iron)								1LG4 (cast-iron)							
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						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ (220 ... 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E						○	○	○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output <sup>1)</sup>	9	L1L						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output <sup>1)</sup>	9	L1C						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ (395 ... 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output <sup>1)</sup>	9	L1A						○	○	○	○	○	○	○	○	○	○	–
400 VΔ (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B						○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ bei 60 Hz) (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U						○	○	○	○	○	○	○	○	○	○	○
400 VΔ 87 Hz output (2-pole to 4-pole only) <sup>2)</sup>	9	L3A						○	○	○	○	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output	9	L2B						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output	9	L2W						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 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						○	○	○	○	○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F						○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output	9	L2L						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M						○	○	○	○	○	○	○	○	○	○	○
Non-standard voltage and/or frequencies																		
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>3)</sup>	9	L1Y •						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

○ Without additional charge

✓ With additional charge

O. R. Possible on request

– Not possible

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

<sup>1)</sup> For Zones 21 and 22, for order codes **L1C**, **L1D**, **L1E**, **L1L**, **L1R**, **L1U**, **L1B** and **L1A** a rated voltage range is also marked on the rating plate.

<sup>2)</sup> The rating data for converter-fed operation is also provided in a table on the rating plate.

<sup>3)</sup> Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions	Voltage code 11th position of the Order No.	Additional identification code 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 S/M	315 L	
Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6																			
			1LG6 (cast-iron)																
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											✓	✓	✓	✓	✓	✓	–
230 VΔ (220 ... 240 VΔ); 50 Hz output <sup>1)</sup>	9	L1E											○	○	○	○	○	○	–
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output <sup>1)</sup>	9	L1L											✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output <sup>1)</sup>	9	L1C											✓	✓	✓	✓	✓	✓	–
415 VΔ (395 ... 435 VΔ); 50 Hz output <sup>1)</sup>	9	L1D											✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output <sup>1)</sup>	9	L1A											○	○	○	○	○	○	–
400 VΔ (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1B											○	○	○	○	○	○	○
400 VΔ (460 VΔ bei 60 Hz) (380 ... 420 VΔ); 50 Hz output <sup>1)</sup>	9	L1U											○	○	○	○	○	○	○
400 VΔ 87 Hz output (4-pole to 8-pole only) <sup>2)</sup>	9	L3A											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–
Voltage at 60 Hz																			
220 VΔ/380 VY; 50 Hz output	9	L2A											✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output	9	L2B											✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C											✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D											✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q											✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output	9	L2W											✓	✓	✓	✓	✓	✓	–
440 VΔ; 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											○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T											✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F											○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U											✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output	9	L2L											✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V											✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M											○	○	○	○	○	○	○
Non-standard voltage and/or frequencies																			
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) <sup>3)</sup>	9	L1Y •											✓	✓	✓	✓	✓	✓	✓

○ Without additional charge

✓ With additional charge

O. R. Possible on request

– Not possible

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

<sup>1)</sup> For Zones 21 and 22, for order codes **L1C**, **L1D**, **L1E**, **L1L**, **L1R**, **L1U**, **L1B** and **L1A** a rated voltage range is also marked on the rating plate.

<sup>2)</sup> The rating data for converter-fed operation is also provided in a table on the rating plate.

<sup>3)</sup> 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 construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size																		315 S/M	315 L	2-pole	4-, 6-, 8-pole
			56	63	71	80	90	100	112	132	160	180	200	225	250	280								
Self-ventilated motors in Zone 1 with type of protection “e” – Aluminum series 1MA7																								
			1MA7 (aluminum)																					
Without flange																								
IM V5 with protective cover <sup>1) 2)</sup>	9	M1F		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
With standard flange																								
IM V18 with protective cover <sup>1) 2)</sup>	9	M2A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
With special flange																								
IM V18 with protective cover <sup>1) 2)</sup>	9	M2B		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
IM B34	9	M2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Self-ventilated motors in Zone 1 with type of protection “e” – Cast-iron series 1MA6																								
			1MA6 (cast-iron)																					
Without flange																								
IM V6 <sup>1) 3)</sup>	9	M1E																	✓ <sup>4)</sup>	○				
IM V5 with protective cover <sup>1) 2) 3)</sup>	9	M1F		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>4)</sup>	✓				
With flange																								
IM V3 <sup>1) 5)</sup>	9	M1G										✓	✓	✓	✓	✓	✓	✓	✓	✓				
With special flange																								
IM V18 with protective cover <sup>1) 2)</sup>	9	M2B		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
IM B34	9	M2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

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

<sup>1)</sup> The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version “with protective cover” is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air-flow.

<sup>2)</sup> The “Second shaft extension” option, order code **K16** is not possible.

<sup>3)</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>4)</sup> 60 Hz version is possible on request.

<sup>5)</sup> 1MA6 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

Special versions	Type of construction code 12th position of the Order No.	Additional identification code 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 motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																		
			1MJ6 (cast-iron)										1MJ7 (cast-iron)					
Without flange																		
IM V5 with protective cover <sup>1) 2) 3)</sup>	9	M1F			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange																		
IM V3 <sup>1) 4)</sup>	9	M1G			–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	
With standard flange																		
IM V18 with protective cover <sup>1) 2)</sup>	9	M2A			✓	✓	✓	–	–	–	–	–	–	–	–	–	–	
With special flange																		
IM V18 with protective cover <sup>1) 2)</sup>	9	M2B			✓	✓	–	–	–	–	–	–	–	–	–	–	–	
IM B34	9	M2C			✓	✓	–	–	–	–	–	–	–	–	–	–	–	

✓ With additional charge

– Not possible

1)

The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version “with protective cover” is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air-flow.

2)

The “Second shaft extension” option, order code **K16** is not possible.

3)

If motors of frame sizes 180 M to 315 M are mounted on the wall, it is recommended that the motor feet are supported.

4)

1MJ7 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.



Special versions	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size																315 S/M	315 L	2-pole	4-, 6-, 8-pole
			56	63	71	80	90	100	112	132	160	180	200	225	250	280						

Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5

			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>1)</sup>		
Without flange															
IM V5 with protective cover <sup>2) 3)</sup>	9	M1F		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange															
IM V3 <sup>2) 4)</sup>	9	M1G		–	–	–	–	–	–	–	–	–	✓	✓	✓
With standard flange															
IM V18 with protective cover <sup>2) 3)</sup>	9	M2A		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
With special flange															
IM V18 with protective cover <sup>2) 3)</sup>	9	M2B		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM B34	9	M2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–

Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9

			1LA9 (aluminum)												
Without flange															
IM V5 with protective cover <sup>2) 3)</sup>	9	M1F		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange															
IM V3	9	M1G		–	–	–	–	–	–	–	–	–	✓	✓	
With standard flange															
IM V18 with protective cover <sup>2) 3)</sup>	9	M2A		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	
With special flange															
IM V18 with protective cover <sup>2) 3)</sup>	9	M2B		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	
IM B34	9	M2C		✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	

Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4

			1LA6 (cast-iron)				1LG4 (cast-iron)										
Without flange																	
IM V6 <sup>2) 6)</sup>	9	M1E	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ <sup>5)</sup>	○
IM V5 with protective cover <sup>2) 3) 6)</sup>	9	M1F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>5)</sup>	✓
With flange																	
IM V3 <sup>2) 7)</sup>	9	M1G	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–
With standard flange																	
IM V18 with protective cover <sup>2) 3)</sup>	9	M2A	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–
With special flange																	
IM V18 with protective cover <sup>2) 3)</sup>	9	M2B	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–
IM B34	9	M2C	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–

Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6

			1LG6 (cast-iron)									
Without flange												
IM V6 <sup>6)</sup>	9	M1E	–	–	–	–	–	–	✓ <sup>5)</sup>	○		
IM V5 with protective cover <sup>2) 3) 6)</sup>	9	M1F	✓	✓	✓	✓	✓	✓	✓ <sup>5)</sup>	✓		
With flange												
IM V3 <sup>2) 7)</sup>	9	M1G	✓	✓	✓	✓	✓	✓	–	–		

- Without additional charge
- ✓

With additional charge
- Not possible

1)

Zone 2 is not possible for motor series 1LA5 and motor series 1LA7 for frame size 56.

2)

The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version “with protective cover” is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air-flow.

3)

The “Second shaft extension” option, order code **K16** is not possible.

4)

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**.

5)

60 Hz version is possible on request.

6)

If motors of frame sizes 180 M to 315 L are mounted on the wall, it is recommended that the motor feet are supported.

7)

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

## Options

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “e” – Aluminum series 1MA7																
		1MA7 (aluminum)														
Design for Zones 1, 2, 21 and 22 according to ATEX																
T1/T2 on rating plate <sup>1)</sup>	C30		–	–	–	–	–	–	○	○						
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>2)</sup>	A11		✓	✓	✓	✓	✓	✓	✓	✓						
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>2)</sup>	A12		✓	✓	✓	✓	✓	✓	✓	✓						
Motor connection and connection box																
Connection box on RHS	K09		–	–	✓	✓	✓	✓	✓	✓						
Connection box on LHS	K10		–	–	✓	✓	✓	✓	✓	✓						
Rotation of the connection box through 90°, entry from DE	K83		✓	✓	✓	✓	✓	✓	✓	✓						
Rotation of the connection box through 90°, entry from NDE	K84		✓	✓	✓	✓	✓	✓	✓	✓						
Rotation of connection box through 180°	K85		✓	✓	✓	✓	○	○	○	○						
Windings and insulation																
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>3)</sup>	C22		✓	✓	✓	✓	✓	✓	✓	✓						
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>3)</sup>	C23		✓	✓	✓	✓	✓	✓	✓	✓						
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>3)</sup>	C24		✓	✓	✓	✓	✓	✓	✓	✓						
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % <sup>3)</sup>	C25		✓	✓	✓	✓	✓	✓	✓	✓						
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26		✓	✓	✓	✓	✓	✓	✓	✓						
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 ....		✓	✓	✓	✓	✓	✓	✓	✓						
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 ....		✓	✓	✓	✓	✓	✓	✓	✓						
Offshore special finish	M91		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.						
Unpainted (only cast iron parts primed)	K23		○	○	○	○	○	○	○	○						
Unpainted, only primed	K24		✓	✓	✓	✓	✓	✓	✓	✓						

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “e” – Aluminum series 1MA7																
		1MA7 (aluminum)														
Mechanical design and degrees of 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	K17		✓	✓	✓	✓	✓	✓	✓	✓						
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>4)</sup>	K37		–	–	–	–	–	–	✓	✓						
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>4)</sup>	K38		–	–	–	–	–	–	✓	✓						
IP65 degree of protection	K50		✓	✓	✓	✓	✓	✓	✓	✓						
IP56 degree of protection (non-heavy-sea)	K52		✓	✓	✓	✓	✓	✓	✓	✓						
Vibration-proof version	L03		✓	✓	✓	✓	✓	✓	✓	✓						
Condensation drainage holes <sup>5)</sup>	L12		✓	✓	✓	✓	✓	✓	✓	✓						
Rust-resistant screws (externally)	M27		–	–	✓	✓	✓	✓	✓	✓						
Coolant temperature and site altitude																
Coolant temperature –40 °C to +40 °C for EX motors <sup>6)</sup>	D19		✓	✓	✓	✓	✓	✓	✓	✓						
Designs in accordance with standards and specifications																
CCC China Compulsory Certification <sup>7)</sup>	D01		✓	✓	✓	✓	–	–	–	–						
VIK version	K30		✓	✓	✓	✓	✓	✓	✓	✓						
Bearings and lubrication																
Bearing design for increased cantilever forces	K20		–	–	–	–	✓	✓	✓	✓						
Regreasing device	K40		–	–	–	–	✓	✓	✓	✓						
Located bearing DE	K94		✓	✓	✓	✓	✓	✓	✓	✓						
Located bearing NDE	L04		✓	✓	✓	✓	✓	✓	✓	✓	□					
Balance and vibration quantity																
Vibration quantity A			□	□	□	□	□	□	□	□						
Vibration quantity B	K02		✓	✓	✓	✓	✓	✓	✓	✓						
Full key balancing	L68		✓	✓	✓	✓	✓	✓	✓	✓						
Balancing without key	M37		✓	✓	✓	✓	✓	✓	✓	✓						
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>8)</sup>	K04		✓	✓	✓	✓	✓	✓	✓	✓						
Second standard shaft extension <sup>9)</sup>	K16		✓	✓	✓	✓	✓	✓	✓	✓						
Shaft extension with standard dimensions without featherkey way	K42		✓	✓	✓	✓	✓	✓	✓	✓						
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	✓	✓	✓	✓	✓	✓	✓						
Non-standard cylindrical shaft extension <sup>10)</sup>	Y55 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓						

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “e” – Aluminum series 1MA7																
		1MA7 (aluminum)														
Heating and ventilation																
Metal external fan	K35		–	–	–	–	✓	✓	✓	✓						
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06		–	–	–	–	✓	✓	✓	✓						
Second rating plate, loose	K31		✓	✓	✓	✓	✓	✓	✓	✓						
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓						
Extra rating plate with identification code	Y82 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓						
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓						
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓						
Operating instructions German/English enclosed in print	B23		□	□	□	□	□	□	□	□						
Wire-lattice pallet	L99		○	○	○	○	○	○	○	○						

- 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

- 1) 2-pole motors 1 MA frame sizes 132 to 160 are designed with double rating plate (T1/T2 and T3) as standard. For motor versions with order codes **A11/A12** or with voltage code “9” T3-output is then stamped on the rating plate as standard. Alternatively, “T1/T2-output on the rating plate” can be stamped – order code **C30**
- 2) Evaluation with associated 3RN1 tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. Motor protection by means of PTC thermistor as sole protection available on request.
- 3) The maximum certified output will be supplied.
- 4) 1MA7 motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 5) 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.
- 6) Not possible in combination with vibration-proof version, order code **L03**.
- 7) CCC certification is required for
  - 2-pole motors ≤2.2 kW
  - 4-pole motors ≤1.1 kW
  - 6-pole motors ≤0.75 kW
  - 8-pole motors ≤0.55 kW
- 8) 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**).
- 9) Not possible for low-noise version (2-pole) for frame sizes 132 S to 160 L. Version with protective cover not possible.
- 10) 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 dimension 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”

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 motors in Zone 1 with type of protection “e” – Cast-iron series 1MA6																
		1MA6 (cast-iron)														
Design for Zones 1, 2, 21 and 22 according to ATEX																
T1/T2 on rating plate <sup>1)</sup>	C30						–	–	○	○	–	–	–	–	–	–
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>2)</sup>	A11						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>2)</sup>	A12						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings <sup>2)</sup>	A72						–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>2)</sup>	A78						–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Motor connection and connection box																
Connection box on RHS	K09						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15						□	□	□	□	✓	✓	□	□	□	□
Rotation of the connection box through 90°, entry from DE	K83						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00						–	–	–	–	✓	✓	✓	✓	✓	✓
Auxiliary connection box 1XB3 020	L97						–	–	–	–	–	–	✓	✓	✓	✓
Windings and insulation																
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>3)</sup>	C22						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>3)</sup>	C23						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>3)</sup>	C24						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % <sup>3)</sup>	C25						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “e” – Cast-iron series 1MA6																
			1MA6 (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 ....						–	–	–	–	–	–	✓	✓	✓	✓
Special finish in RAL 7030 stone gray <sup>4)</sup>	K26						□	□	□	□	□	□	✓	✓	✓	✓
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 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 ....						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Offshore special finish	M91						O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
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						○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for type of construction IM V3; with frame size 180 M and above, only possible for 4-pole to 6-pole motors	K17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>5)</sup>	K37						–	–	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>5)</sup>	K38						–	–	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection	K50						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03						✓	✓	✓	✓	–	–	–	–	–	–
Condensation drainage holes <sup>6)</sup>	L12						✓	✓	✓	✓	✓	✓	–	–	–	–
Rust-resistant screws (externally)	M27						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude																
Coolant temperature –40 °C to +40 °C for EX motor <sup>7)</sup>	D19						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
VIK version	K30						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50						–	–	–	–	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces <sup>8)</sup>	K20						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40						✓	✓	✓	✓	✓	✓	✓	✓	□	□
Located bearing DE	K94						✓	✓	✓	✓	✓	✓	–	–	–	–
Located bearing NDE	L04						✓	✓	✓	□	–	–	–	–	–	–

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “e” – Cast-iron series 1MA6																
		1MA6 (cast-iron)														
Balance and vibration quantity																
Vibration quantity A							□	□	□	□	□	□	□	□	□	□
Vibration quantity B	K02						✓	✓	✓	✓	✓	✓	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>
Full key balancing	L68						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>9)</sup>	K04						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension <sup>10)</sup>	K16						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions without featherkey way	K42						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension <sup>11)</sup>	Y55 • and identification code						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Cast-iron fan cover	K34						–	–	–	–	–	–	✓	✓	✓	✓
Metal external fan	K35						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45						–	–	–	–	–	–	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46						–	–	–	–	–	–	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification code	Y82 • and identification code						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 according to EN 10204	B02						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English enclosed in print	B23						□	□	□	□	□	□	□	□	□	□
Wire-lattice pallet	L99						○	○	○	○	○	○	–	–	–	–

- 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

- 1) 2-pole motors 1MA frame sizes 132 to 160 are designed with double rating plate (T1/T2 and T3) as standard. For motor versions with order codes **A11/A12** or with voltage code "9" T3-output is then stamped on the rating plate as standard. Alternatively, "T1/T2-output on the rating plate" can be stamped – order code **C30**
- 2) Evaluation with associated 3RN1 tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. Motor protection with PTC thermistors is available as sole protection up to frame size 160 L on request. With frame size 180 M and above, it is not permitted as sole protection; motor protection switch is required.
- 3) The maximum certified output will be supplied.
- 4) For frame sizes 100 to 200, do not specify an order code. Order code is only necessary for frame sizes 225 to 315.
- 5) 1MA6 motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 6) 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.
- 7) Not possible in combination with vibration-proof version, order code **L03**.
- 8) Not possible for 2-pole 1MA6 motors, frame size 315 L in vertical type of construction; bearings for increased cantilever forces for vibration quantity level B are available on request for 1MA6 motors of frame size 225 M and above. Not possible for 1MA6 motors of frame size 225 M and above in combination with concentricity of shaft extension, coaxiality and linear movement according to DIN 42955 tolerance R for flange-mounting types.
- 9) 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**).
- 10) For motors of frame size 180 M and above in vertical type of construction in version with second shaft extension on request. Not possible for low-noise version (2-pole) for frame sizes 132 S to 160 L. Version with protective cover not possible.
- 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 applicable 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  $\leq$  Inner diameter of roller bearing (see tables under "Dimensions")
  - Dimensions E and EA  $\leq 2 \times$  Length E (normal) of the shaft extensionFor explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".



Special versions	Additional identification code - <b>Z</b> 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 motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																
			1MJ6 (cast-iron)										1MJ7 (cast-iron)			
Design for Zones 1, 2, 21 and 22 according to ATEX																
Design for Zones 1 and 21, as well as for Zone 22 for conducting dust (IP65), for mains-fed operation <sup>1)</sup>	M76		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zones 1 and 21, as well as for Zone 22 for conducting dust (IP65), for converter-fed operation, derating <sup>1)</sup>	M77		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>2) 3)</sup>	A11		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>2) 3) 4)</sup>	A12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors for converter-fed operation with 4 embedded temperature sensors for tripping <sup>2) 3)</sup>	A15		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors for converter-fed operation with 8 embedded temperature sensors for alarm and tripping <sup>2) 3) 4)</sup>	A16		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings <sup>2)</sup>	A72		–	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>2)</sup>	A78		–	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Motor connection and connection box																
Connection box on RHS	K09		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15		✓	✓	✓	✓	✓	✓	✓	✓ <sup>5)</sup>	✓	✓	✓	□	□	□
Explosion-proof connection box, Ex d IIC type of protection <sup>6)</sup>	K53		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85		○	○	○	○	○	○	○	○	○	○	○	○	○	○
Auxiliary connection box 1XB3020 <sup>7)</sup>	L97		–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (3 items of high saddle terminals)	M47		–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																	
		1MJ6 (cast-iron)										1MJ7 (cast-iron)					
Windings and insulation																	
Increased air humidity/temperature with 30 to 60 g water per m³ of air	C19			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % <sup>8)</sup>	C22			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>8)</sup>	C23			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>8)</sup>	C24			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Increased air humidity/temperature with 60 to 100 g water per m³ of air	C26			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), with a higher coolant temperature and/or site altitude	Y50 • and specified output, CT... °C or SA .... m above sea level			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
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 ....			–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Special finish in RAL 7030 stone gray <sup>9)</sup>	K26			□	□	□	□	□	□	□	□	□	□	✓	✓	✓	✓
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 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 ....			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Offshore special finish	M91			O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
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.	O. R.	O. R.	O. R.	O. R.
Unpainted (only cast iron parts primed)	K23			○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special technology																	
Mounting of the explosion-proof rotary pulse encoder for use on Ex d/de motors in Zone 1 <sup>10)</sup>	H87			–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of the explosion-proof Ex de separately driven fan for use in Zone 1 <sup>11)</sup>	M98			–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓

Special versions	Additional identifica- tion code <b>-Z</b> 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 motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																
		1MJ6 (cast-iron)										1MJ7 (cast-iron)				
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for type of construction IM V3; with frame size 180 M and above, only possible for 4-pole to 8-pole motors	K17															
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>12)</sup>	K37															
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>12)</sup>	K38															
IP65 degree of protection <sup>13)</sup>	K50															
IP56 degree of protection (non-heavy-sea)	K52															
Vibration-proof version	L03															
Mechanical protection for encoder <sup>15)</sup>	M68															
Designs in accordance with standards and specifications																
CCC China Compulsory Certification <sup>16)</sup>	D01															
VIK version	K30															
Ex certification for China	D32															
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50															
Bearing design for increased cantilever forces <sup>17)</sup>	K20															
Regreasing device	K40															
Insulated bearing cartridge	L27															
Balance and vibration quantity																
Vibration quantity A																
Vibration quantity B	K02															
Full key balancing	L68															
Balancing without key	M37															
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>18)</sup>	K04															
Second standard shaft extension <sup>19)</sup>	K16															
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39															
Non-standard cylindrical shaft extension <sup>20)</sup>	Y55 • and identifica- tion code															
Heating and ventilation																
Metal external fan	K35															
Anti-condensation heaters for 230 V <sup>21)22)</sup>	K45															
Anti-condensation heaters for 115 V <sup>21)22)</sup>	K46															
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identifica- tion code															

Special versions	Additional identification code <b>-Z</b> 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 motors in Zone 1 with type of protection “de” – Cast-iron series 1MJ6 and 1MJ7																	
			1MJ6 (cast-iron)										1MJ7 (cast-iron)				
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06		–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	
Second rating plate, loose	K31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Extra rating plate with identification code	Y82 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Packaging, safety notes, documentation and test certificates																	
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Operating instructions German/English enclosed in print	B23		□	□	□	□	□	□	□	□	□	□	□	□	□	□	
Wire-lattice pallet	L99		○	○	○	○	○	○	○	○	○	○	–	–	–	–	

- 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

- 1) In combination with order codes **K30** and **M98** please inquire. Not possible in combination with order codes **D32**, **K50** and **K52**.
- 2) Evaluation with appropriate 3RN1 tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required.
- 3) For 1MJ6 motors, for a version with PTC thermistors, an anti-condensation heater (order code **K45**, **K46**) up to frame size 160 L is not possible.
- 4) For 1MJ6 motors frame sizes 180 to 200 and 1MJ7 motors, for a version with PTC thermistors, an anti-condensation heater (order code **K45**, **K46**) is not possible. Exception: 1MJ7 frame size 315.
- 5) For 1MJ6 motors frame size 160 L standard version.
- 6) Drilled holes for the cable glands are sealed with Exd plugs for 1MJ motors as standard. On request, the Exd cable entries can be supplied for 1MJ7 motors. When ordering, the number of cables and outer diameters must be specified so that the appropriate cable glands can be supplied.
- 7) Not possible in combination with order code **K53**, since the auxiliary connection box has been approved only for Ex de.
- 8) Derating does not apply in combination with order codes **L2A**, **L2C**, **L2Q**, **L2R**, **L2S**, **L2T**, **L2U** and **L2V**.
- 9) For frame sizes 71 to 200, do not specify an order code. Order code is only necessary for frame sizes 225 to 315.
- 10) In combination with order codes **C19**, **C26**, **L27** and **M98** please inquire. Not possible in combination with order codes **C22** to **C25** (frame sizes 90 to 160), **D19**, **K16**, **K50**, **M77**. Furthermore a combination with protective cover is not possible. Therefore a suitable cover must be implemented by the end user in vertical mounting position to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 11) In combination with order codes **C19**, **C22** to **C26**, **D19**, **H87**, **K50**, **K52**, **M76** and **M77** please inquire. Not possible in combination with order code **K16**.
- 12) The motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 13) Order code **K50** (protective cover IP65) can be ordered only for Zone 1. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 14) A combination of order code **K52** degree of protection IP56 (non-heavy-sea) with **M76** or **M77** is not permissible.
- 15) 1MJ6 motors of frame size 90 to 160 have a rugged flanged. Ex OG9 rotary pulse encoder, which offers alone a high mechanical protection. The mechanical protection for the encoder is 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.
- 16) CCC certification is required for
  - 2-pole motors ≤2.2 kW
  - 4-pole motors ≤1.1 kW
  - 6-pole motors ≤0.75 kW
  - 8-pole motors ≤0.55 kW
- 17) Bearings for increased cantilever forces at vibration quantity level B on request.
- 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**).
- 19) For 1MJ6/1MJ7 motors of frame size 180 M and above in vertical type of construction in version with second shaft extension on request. Not possible for low-noise version (2-pole). Version with protective cover not possible.
- 20) When motors which have a longer or shorter shaft extension than normal are ordered, 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 dimension 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”.
- 21) For 1MJ6 motors, version with 3, 4 PTC thermistors (order codes **A11**, **A15**) is not possible up to frame size 160 L.
- 22) Not possible for version with 6, 8 PTC thermistors (order codes **A12**, **A16**). Exception: 1MJ7 frame size 315.

Special versions	Additional identifica- tion code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																
			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>2)</sup>			
Design for Zones 1, 2, 21 and 22 according to ATEX <sup>3)</sup>																
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15 <sup>4)</sup>	M72		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>4) 5) 6)</sup>	M73		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Design for Zones 2 and 22, for non-conducting dust (IP55), for mains-fed operation <sup>7)</sup>	M74		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Design for Zones 2 and 22, for non-conducting dust (IP55), for converter-fed operation, derating <sup>5) 6) 7)</sup>	M75		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for mains-fed operation <sup>8)</sup>	M34		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for con-verter-fed operation, derating <sup>4) 6) 8)</sup>	M38		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Design for Zone 22 for non-conducting dust (IP55) for mains-fed operation	M35		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Design for Zone 22 for conducting dust (IP55) for converter-fed operation, derating <sup>4) 6)</sup>	M39		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VIK design (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate)	K30		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Ex nA II on VIK rating plate	C27		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS S120 or ET 200S FC)	Y68 • and converter type ....		○	○	○	○	○	○	○	○	○	○	○	○		
Motor protection																
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 <sup>9)</sup>	A10		✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>9)</sup>	A11		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>9)</sup>	A12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>9)</sup>	A23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 <sup>9)</sup>	A25		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Installation of 3 PT 100 resistance thermometers <sup>9)</sup>	A60		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓		

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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																	
			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>2)</sup>				
Motor connection and connection box																	
Connection box on RHS	K09		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Connection box on LHS	K10		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓			
One cable gland, metal <sup>10)</sup>	K54		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Cable gland, maximum configuration	K55		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.			
Rotation of the connection box through 90°, entry from DE	K83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of the connection box through 90°, entry from NDE	K84		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of connection box through 180°	K85		✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓			
Next larger connection box	L00		–	–	–	–	–	–	–	–	✓	✓	✓	✓			
External earthing	L13		□	□	□	□	□	□	□	□	□	□	□	□			
Windings and insulation																	
Increased air humidity/temperature with 30 to 60 g water per m³ of air	C19		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % <sup>11)</sup>	C22		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>11)</sup>	C23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>11)</sup>	C24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m³ of air	C26		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
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		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Special versions	Additional identifica- tion code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																
			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>2)</sup>			
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 ....		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
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 ....		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
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.	O. R.	O. R.	O. R.	
Unpainted (only cast iron parts primed)	K23		○	○	○	○	○	○	○	○	○	○	○	○	○	
Unpainted, only primed	K24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special technology																
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 <sup>12)</sup>	H86		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 <sup>13)</sup>	M97		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Mechanical design and degrees of 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	K17		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With two additional eyebolts for IM V1/IM V3	K32		–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	
Low-noise version for 2-pole motors with clockwise direction of rotation	K37		–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38		–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	
IP65 degree of protection <sup>14)</sup>	K50		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IP56 degree of protection (non-heavy-sea) <sup>15)</sup>	K52		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Vibration-proof version	L03		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Condensation drainage holes <sup>16)</sup>	L12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rust-resistant screws (externally)	M27		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mechanical protection for encoder <sup>17)</sup>	M68		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																
			1LA7 (aluminum) <sup>1)</sup>									1LA5 (aluminum) <sup>2)</sup>				
Coolant temperature and site altitude																
Coolant temperature –40 °C to +40 °C for EX motor <sup>18)</sup>	D19		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Designs in accordance with standards and specifications																
CCC China Compulsory Certification <sup>19)</sup>	D01		✓	✓	✓	✓	✓	✓	✓	–	–	–	–			
Electrical according to NEMA MG1-12	D30		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Ex-certification for China (only valid for Zone 2)	D32		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–		
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓		
Bearing design for increased cantilever forces	K20		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓		
Regreasing device	K40		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓		
Located bearing DE	K94		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Located bearing NDE	L04		✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□	
Balance and vibration quantity																
Vibration quantity A			□	□	□	□	□	□	□	□	□	□	□	□		
Vibration quantity B	K02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Full key balancing	L68		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Balancing without key	M37		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
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		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Second standard shaft extension	K16		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Shaft extension with standard dimensions without featherkey way	K42		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Standard shaft made of rust-resistant steel	M65		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Non-standard cylindrical shaft extension <sup>21)</sup>	Y55 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Heating and ventilation																
Fan cover for textile industry	H17		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Metal external fan <sup>22)</sup>	K35		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heater, Ex. 230 V	M15		–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
Anti-condensation heater, Ex. 115 V	M14		–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		



Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA7 and 1LA5																
			1LA7 (aluminum) <sup>1)</sup>										1LA5 (aluminum) <sup>2)</sup>			
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓		
Second rating plate, loose	K31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Extra rating plate with identification code	Y82 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Operating instructions German/English enclosed in print	B23		□	□	□	□	□	□	□	□	□	□	□	□		
Type test with heat run for vertical motors, with acceptance	F83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Wire-lattice pallet	L99		○	○	○	○	○	○	○	○	○	○	–	–		
Connected in star for dispatch	M32		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Connected in delta for dispatch	M33		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

- 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

- 1) Zone 2 for motor series 1LA7 only frame size 63 and above.
- 2) Zone 2 is not possible for motor series 1LA5. For Zone 2, instead of 1LA5 motors, 1LG4 motors are used.
- 3) Anti-condensation heater up to frame size 71 M not possible.
- 4) These motors do not have a rated voltage range stamped on the rating plate.
- 5) According to the standard, the motor and converter must be tested as a unit. A "Manufacturer test certificate" is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converter. Please inquire in the case of a non-Siemens converter (additional charge).
- 6) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The operating data for the MICROMASTER converter series from Siemens are specified on the rating plate as standard. Derating information is available on request. For converter-fed operation only voltage codes/order codes with only one voltage are permitted, see also "Overview" Page 2.
- 7) In combination with order codes **D19**, **K30** and **M97** please inquire. Not possible in combination with order codes **D32**, **K50** and **K52**.
- 8) Zone 21 takes into account conducting and non-conducting dust.
- 9) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. KTY 84-130 and PT 100 are not permitted as sole protection. Full motor protection for mains-fed operation implemented only with PTC thermistors, please inquire.
- 10) For 1LA7 and 1LA5 motors additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a certified metal cable gland in the standard version.
- 11) Derating does not apply in combination with order codes **L2A**, **L2C**, **L2Q**, **L2R**, **L2S**, **L2T**, **L2U** and **L2V**.
- 12) In combination with order codes **C19**, **C26**, **L27** and **M97** please inquire. Not possible in combination with order code **K16**. Furthermore a combination with protective cover is not possible. Therefore a suitable cover must be implemented by the end user in vertical mounting position to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 13) In combination with order codes **C19**, **C22**, **C23**, **C24**, **C25**, **C26**, **D19**, **H86**, **K50** and **K52** please inquire. Not possible in combination with order codes **C27**, **K16**, **K30**, **M72**, **M73**, **M34**, **M38**, **M74** and **M75**.
- 14) Order code **K50** (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 15) Order code **K52** IP56 degree of protection (non-heavy-sea) is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).

- 16) When supplied the condensation drainage holes are 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.
- 17) 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 cover.
- 18) Not possible in combination with order code **L03**. The mechanical limit speed of 1LA5 2-pole motors in the design for Zones 21/22 from frame size 180 has been reduced compared to the values in part "Motors operating with frequency converters":

Frame size	2 pole $n_{\max}$ in rpm	$f_{\max}$ in Hz
180	3300	55
200	3100	51
225	3000	50

This is particularly important to be observed for converter-fed operation and operation on 60 Hz line supplies. Option: 1LG4 motors in the design for Zones 21/22.

- 19) CCC certification is required for
  - 2-pole motors:  $\leq 2.2$  kW
  - 4-pole motors:  $\leq 1.1$  kW
  - 6-pole motors:  $\leq 0.75$  kW
  - 8-pole motors:  $\leq 0.55$  kW
- 20) Can be combined with deep-groove bearings of series 60..., 62... and 63... Not possible with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
- 21) When motors which have a longer or shorter shaft extension than normal are ordered, 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  $\leq$  internal diameter of roller bearing (see dimension tables under "Dimensions")
    - Dimensions E and EA  $\leq 2 \times$  length E (normal) of the shaft extension
  - For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".
- 22) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with the low-noise version – order code **K37** or **K38**.

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9																
			1LA9 (aluminum)													
Design for Zones 1, 2, 21 and 22 according to ATEX <sup>1)</sup>																
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15 <sup>2)</sup>	M72		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>2)3)4)</sup>	M73		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Design for Zones 2 and 22, for non-conducting dust (IP55), for mains-fed operation <sup>5)</sup>	M74		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Design for Zones 2 and 22, for non-conducting dust (IP55), for converter-fed operation, derating <sup>3)4)5)</sup>	M75		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for mains-fed operation <sup>6)</sup>	M34		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for converter-fed operation, derating <sup>2)4)6)</sup>	M38		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Design for Zone 22 for non-conducting dust (IP55) for mains-fed operation	M35		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Design for Zone 22 for non-conducting dust (IP55) for converter-fed operation, derating <sup>2)4)</sup>	M39		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
VIK design (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate)	K30		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Ex nA II on VIK rating plate	C27		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS S120 or ET 200S FC)	Y68 • and converter type ....		○	○	○	○	○	○	○	○	○	○	○			
Motor protection																
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 <sup>7)</sup>	A10		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>7)</sup>	A11		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>7)</sup>	A12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>7)</sup>	A23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 <sup>7)</sup>	A25		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Installation of 3 PT 100 resistance thermometers <sup>7)</sup>	A60		–	–	–	–	–	✓	✓	✓	✓	✓	✓			

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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9																
		1LA9 (aluminum)														
Motor connection and connection box																
Connection box on RHS	K09		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
Connection box on LHS	K10		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
One cable gland, metal <sup>8)</sup>	K54		–	–	–	–	✓	✓	✓	✓	✓	–	–			
Cable gland, maximum configuration	K55		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.			
Rotation of the connection box through 90°, entry from DE	K83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of the connection box through 90°, entry from NDE	K84		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of connection box through 180°	K85		✓	✓	✓	✓	✓	○	○	○	○	✓	✓			
Next larger connection box	L00		–	–	–	–	–	–	–	–	–	✓	✓			
External earthing	L13		□	□	□	□	□	□	□	□	□	□	□			
Windings and insulation																
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>9)</sup>	C22		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % <sup>9)</sup>	C23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % <sup>9)</sup>	C24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), with a higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA .... m above sea level		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
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, 7033, 7035, 9001, 9002, 9005	Y54 • and special finish RAL ....		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
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 ....		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
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.	O. R.			
Unpainted (only cast iron parts primed)	K23		○	○	○	○	○	○	○	○	○	○	○			
Unpainted, only primed	K24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9																
			1LA9 (aluminum)													
Special technology																
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 <sup>10)</sup>	H86		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 <sup>11)</sup>	M97		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Mechanical design and degrees of 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.	K17		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Low-noise version for 2-pole motors with clockwise direction of rotation	K37		–	–	–	–	–	–	–	–	–	✓	✓			
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38		–	–	–	–	–	–	–	–	–	✓	✓			
IP65 degree of protection <sup>12)</sup>	K50		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IP56 degree of protection (non-heavy-sea) <sup>13)</sup>	K52		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Vibration-proof version	L03		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Condensation drainage holes <sup>14)</sup>	L12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rust-resistant screws (externally)	M27		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Mechanical protection for encoder <sup>15)</sup>	M68		–	–	–	–	✓	✓	✓	✓	✓	✓	✓			
Coolant temperature and site altitude																
Coolant temperature –40 °C to +40 °C for EX motor <sup>16)</sup>	D19		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Designs in accordance with standards and specifications																
CCC China Compulsory Certification <sup>17)</sup>	D01		✓	✓	✓	✓	✓	–	–	–	–	–	–			
Electrical according to NEMA MG1-12	D30		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Ex-certification for China (only valid for Zone 2)	D32		–	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Bearing design for increased cantilever forces	K20		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Regreasing device	K40		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Located bearing DE	K94		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Located bearing NDE	L04		✓	✓	✓	✓	✓	✓	✓	✓	□	□	□			
Balance and vibration quantity																
Vibration quantity A			□	□	□	□	□	□	□	□	□	□	□			
Vibration quantity B	K02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Full key balancing	L68		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Balancing without key	M37		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Aluminum series 1LA9																
		1LA9 (aluminum)														
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>18)</sup>	K04		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Second standard shaft extension	K16		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Shaft extension with standard dimensions without featherkey way	K42		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Non-standard cylindrical shaft extension <sup>19)</sup>	Y55 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Heating and ventilation																
Fan cover for textile industry	H17		–	–	–	–	–	–	✓	✓	–	–	–			
Metal external fan <sup>20)</sup>	K35		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Anti-condensation heater, Ex. 230 V	M15		–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.			
Anti-condensation heater, Ex. 115 V	M14		–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.			
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06		–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Second rating plate, loose	K31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Extra rating plate with identification code	Y82 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Operating instructions German/English enclosed in print	B23		□	□	□	□	□	□	□	□	□	□	□			
Type test with heat run for vertical motors, with acceptance	F83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Wire-lattice pallet	L99		○	○	○	○	○	○	○	○	○	○	–			
Connected in star for dispatch	M32		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Connected in delta for dispatch	M33		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

- 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

- 1) Anti-condensation heater up to frame size 71 M not possible.
- 2) These motors do not have a rated voltage range stamped on the rating plate.
- 3) According to the standard, the motor and converter must be tested as a unit. A "Manufacturer test certificate" is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converter. Please inquire in the case of a non-Siemens converter (additional charge).
- 4) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The operating data for the MICROMASTER converter series from Siemens are specified on the rating plate as standard. Derating information is available on request. For converter-fed operation only voltage codes/order codes with only one voltage are permitted, see also "Overview" on Page 2.
- 5) In combination with order codes **D19**, **K30** and **M97** please inquire. Not possible in combination with order codes **D32**, **K50** and **K52**.
- 6) Zone 21 takes into account conducting and non-conducting dust.
- 7) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. KTY 84-130 and PT 100 are not permitted as sole protection. Full motor protection for mains-fed operation implemented only with PTC thermistors, please inquire.
- 8) For 1LA9 motors additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a certified metal cable gland in the standard version.
- 9) Derating does not apply in combination with order codes **L2A**, **L2C**, **L2Q**, **L2R**, **L2S**, **L2T**, **L2U** and **L2V**.
- 10) In combination with order codes **C19**, **C26**, **L27** and **M97** please inquire. Not possible in combination with order code **K16**. Furthermore a combination with protective cover is not possible. Therefore a suitable cover must be implemented by the end user in vertical mounting position to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 11) In combination with order codes **C19**, **C22**, **C23**, **C24**, **C25**, **C26**, **C27**, **D19**, **H86**, **K30**, **K50** and **K52** please inquire. Not possible in combination with order codes **C27**, **K16**, **K30**, **M72**, **M73**, **M34**, **M38**, **M74** and **M75**.
- 12) Order code **K50** (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 13) Order code **K52** IP56 degree of protection (non-heavy-sea) is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).
- 14) When supplied the condensation drainage holes are 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.
- 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 cover.
- 16) Not possible in combination with order code **L03**.  
The mechanical limit speed of 1LA9 2-pole motors in the design for Zones 21/22 from frame size 180 has been reduced compared to the values in part "Motors operating with frequency converters":

Frame size	2 pole $n_{\max}$ in rpm	$f_{\max}$ in Hz
180	3300	55
200	3100	51

This is particularly important to be observed for converter-fed operation and operation on 60 Hz line supplies. Option: 1LG6 motors in the design for Zones 21/22.
- 17) CCC certification is required for
  - 2-pole motors  $\leq 2.2$  kW
  - 4-pole motors  $\leq 1.1$  kW
  - 6-pole motors  $\leq 0.75$  kW
  - 8-pole motors  $\leq 0.55$  kW
- 18) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
- 19) When motors which have a longer or shorter shaft extension are ordered, 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  $\leq$  internal diameter of roller bearing (see dimension tables under "Dimensions")
  - Dimensions E and EA  $\leq 2 \times$  length E (normal) of the shaft extension
For an explanation of the order codes, see Catalog D 81.1 part 0 "Introduction".
- 20) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with a low-noise version – order code **K37** or **K38**.

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4																
							1LA6 (cast-iron)				1LG4 (cast-iron)					
Design for Zones 1, 2, 21 and 22 according to ATEX <sup>1)</sup>																
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15 <sup>2)</sup>	M72						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>2)3)4)</sup>	M73						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zones 2 and 22, for non-conducting dust (IP55), for mains-fed operation <sup>5)</sup>	M74						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zones 2 and 22, for non-conducting dust (IP55), for converter-fed operation, derating <sup>3)4)5)</sup>	M75						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for mains-fed operation <sup>6)</sup>	M34						–	–	–	–	✓	✓	✓	✓	✓	✓
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for converter-fed operation, derating <sup>2)4)6)</sup>	M38						–	–	–	–	✓	✓	✓	✓	✓	✓
Design for Zone 22 for non-conducting dust (IP55) for mains-fed operation	M35						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 22 for non-conducting dust (IP55) for converter-fed operation, derating <sup>2)4)</sup>	M39						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VIK design (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate)	K30						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex nA II on VIK rating plate	C27						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS S120 or ET 200S FC)	Y68 • and converter type ....						○	○	○	○	○	○	○	○	○	○
Motor protection																
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 <sup>7)</sup>	A10						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>7)</sup>	A11						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>7)</sup>	A12						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>7)</sup>	A23						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 <sup>7)</sup>	A25						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers <sup>7)</sup>	A60						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding <sup>7)</sup>	A61						–	–	–	–	✓	✓	✓	✓	✓	✓



Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size												180	200	225	250	280	315
		56	63	71	80	90	100	112	132	160									
Self-ventilated motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4																			
			1LA6 (cast-iron)				1LG4 (cast-iron)												
Motor protection (continued)																			
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings <sup>7)</sup>	A72						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Installation of 2 PT 100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>7)</sup>	A78						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>7)</sup>	A80						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Motor connection and connection box																			
Two-part plate on connection box	K06						–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Connection box on RHS	K09						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box on LHS	K10						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box on top, feet screwed on	K11						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box in cast-iron version	K15						–	–	–	–	✓	✓	✓	□	□	□	□	□	
One cable gland, metal <sup>8)</sup>	K54						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cable gland, maximum configuration <sup>8)</sup>	K55						O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Rotation of the connection box through 90°, entry from DE	K83						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from NDE	K84						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of connection box through 180°	K85						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Next larger connection box	L00						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
External earthing	L13						□	□	□	□	□	□	□	□	□	□	□	□	
Auxiliary connection box 1XB3 020	L97						–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47						–	–	–	–	–	–	–	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>	
Windings and insulation																			
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 %	C22						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Increased air humidity/temperature with 60 to 100 g water per m <sup>3</sup> of air	C26						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
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						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	Motor type frame size												180	200	225	250	280	315
		56	63	71	80	90	100	112	132	160									
Self-ventilated motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 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 .....		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Special finish in RAL 7030 stone gray <sup>10)</sup>	K26		□	□	□	□	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
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 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 .....		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Offshore special finish	M91		O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
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.	O. R.	O. R.	O. R.	O. R.	O. R.		
Unpainted (only cast iron parts primed)	K23		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Unpainted, only primed	K24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Special technology																			
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 <sup>11)</sup>	H86		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2 <sup>12)</sup>	M95		–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mounting of explosion-proof separately driven fan II 2D for use in Zone 21 <sup>12)</sup>	M96		–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 <sup>12)</sup>	M97		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mechanical design and degrees of 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 <sup>13)</sup>	K17		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>14)</sup>	K37		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>14)</sup>	K38		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
IP65 degree of protection <sup>15)</sup>	K50		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
IP56 degree of protection (non-heavy-sea) <sup>16)</sup>	K52		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Vibration-proof version	L03		✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–		
Condensation drainage holes <sup>17)</sup>	L12		✓	✓	✓	✓	✓	□	□	□	□	□	□	□	□	□	□		
Rust-resistant screws (externally)	M27		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mechanical protection for encoder <sup>18)</sup>	M68		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4																	
							1LA6 (cast-iron)				1LG4 (cast-iron)						
Coolant temperature and site altitude																	
Coolant temperature –40 °C to +40 °C for EX motor <sup>19)</sup>	D19					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																	
Electrical according to NEMA MG1-12	D30					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex certification for China (only valid for Zone 2)	D32					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication																	
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces <sup>20)</sup>	K20					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size	K36					–	–	–	–	✓	✓	✓	✓	✓	✓ <sup>21)</sup>	✓ <sup>21)</sup>	
Regreasing device	K40					✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	
Located bearing DE	K94					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04					✓	✓	✓	□	□	□	□	□	□	□	□	□
Insulated bearing cartridge	L27					–	–	–	–	–	–	✓	✓	✓	✓	✓	✓
Balance and vibration quantity																	
Vibration quantity A						□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity B <sup>22)</sup>	K02					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full key balancing	L68					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension <sup>24)</sup>	K16					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions without featherkey way	K42					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of rust-resistant steel	M65					✓	✓	✓	✓	–	–	–	–	–	–	–	–
Non-standard cylindrical shaft extension <sup>25)</sup>	Y55 • and identification code					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																	
Fan cover for textile industry	H17					✓	✓	✓	✓	–	–	–	–	–	–	–	–
Metal external fan <sup>26)</sup>	K35					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heater, Ex. 230 V	M15					O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Anti-condensation heater, Ex. 115 V	M14					O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code					–	–	–	–	–	–	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification code	Y82 • and identification code					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21, 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LA6 and 1LG4																	

			1LA6 (cast-iron)				1LG4 (cast-iron)				
Packaging, safety notes, documentation and test certificates											
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English enclosed in print	B23		□	□	□	□	□	□	□	□	□
Type test with heat run for horizontal motors, with acceptance	F83		✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99		○	○	○	○	–	–	–	–	–
Connected in star for dispatch	M32		✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33		✓	✓	✓	✓	✓	✓	□	□	□

- 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

- 1) Only permitted for use in accordance with temperature class 130 (B).
- 2) These motors do not have a rated voltage range stamped on the rating plate.
- 3) According to the standard, the motor and converter must be tested as a unit. A “Manufacturer test certificate” is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converter. Please inquire in the case of a non-Siemens converter (additional charge).
- 4) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The operating data for the MICROMASTER converter series from Siemens are specified on the rating plate as standard. Derating information is available on request. For converter-fed operation only voltage codes/order codes with only one voltage are permitted, see also “Overview” on Page 2.
- 5) In combination with order codes **D19, K30, M95, M96** and **M97** please inquire. Not possible in combination with order codes **D32, K50** and **K52**.
- 6) Zone 21 takes into account conducting and non-conducting dust.
- 7) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. KTY 84-130 and PT 100 are not permitted as sole protection. Full motor protection for mains-fed operation implemented only with PTC thermistors, please inquire.
- 8) For 1LA6 and 1LG6 motors additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a certified metal cable gland in the standard version. Standard with designs for Zone 2, Zone 21 and VIK.
- 9) Standard with designs for Zone 2, Zone 21 and VIK.
- 10) For frame sizes 100 to 160, do not specify an order code. Order code is only necessary for frame sizes 180 to 315.
- 11) In combination with order codes **C19, C26, L27, M95, M96** and **M97** please inquire. Not possible in combination with order code **K16**. Furthermore a combination with protective cover is not possible. Therefore a suitable cover must be implemented by the end user in vertical mounting position to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 12) In combination with order codes **C19, C22, C23, C24, C25, C26, C27, D19, H86, K30, K50** and **K52** please inquire. Not possible in combination with order code **K16**. The type of protection of the separately driven fan must correspond to the type of protection of the motor.
- 13) Not possible for motor series 1LG4 for 2-pole motors.
- 14) For 1LG4 motors a second shaft extension is not possible in the low-noise version.
- 15) Order code **K50** (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 16) Order code **K52** IP56 degree of protection (non-heavy-sea) is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).
- 17) For 1LA6 motors: When supplied the condensation drainage holes are 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.
- 18) 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 cover.
- 19) Not possible in combination with order code **L03**.
- 20) 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 B 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**.
- 21) Additional charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 22) Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
- 23) 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**).
- 24) 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.
- 25) When motors which have a longer or shorter shaft extension than normal are ordered, 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 dimension 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”.
- 26) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with the low-noise version – order code **K37** or **K38**.

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	Motor type frame size														180	200	225	250	280	315
		56	63	71	80	90	100	112	132	160											
Self-ventilated motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6																					
																		1LG6 (cast-iron)			
Design for Zones 1, 2, 21 and 22 according to ATEX <sup>1)</sup>																					
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15 <sup>2)</sup>	M72														✓	✓	✓	✓	✓	✓	
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>2) 3) 4)</sup>	M73														✓	✓	✓	✓	✓	✓	
Design for Zones 2 and 22, for non-conducting dust (IP55), for mains-fed operation <sup>5)</sup>	M74														✓	✓	✓	✓	✓	✓	
Design for Zones 2 and 22, for non-conducting dust (IP55), for converter-fed operation, derating <sup>4) 5)</sup>	M75														✓	✓	✓	✓	✓	✓	
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for mains-fed operation <sup>6)</sup>	M34														✓	✓	✓	✓	✓	✓	
Design for Zone 21, as well as Zone 22 for conducting dust (IP65) for converter-fed operation, derating <sup>2) 4) 6)</sup>	M38														✓	✓	✓	✓	✓	✓	
Design for Zone 22 for non-conducting dust (IP55) for mains-fed operation	M35														✓	✓	✓	✓	✓	✓	
Design for Zone 22 for non-conducting dust (IP55) for converter-fed operation, derating <sup>2) 4)</sup>	M39														✓	✓	✓	✓	✓	✓	
VIK design (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate)	K30														✓	✓	✓	✓	✓	✓	
Ex nA II on VIK rating plate	C27														✓	✓	✓	✓	✓	✓	
Alternative converter (SIMOVERT MASTERDRIVES, SIMOVERT S120)	Y68 • and converter type ....														○	○	○	○	○	○	
Motor protection																					
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 <sup>7)</sup>	A10														✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping <sup>7)</sup>	A11														✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>7)</sup>	A12														✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>7)</sup>	A23														✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 <sup>7)</sup>	A25														✓	✓	✓	✓	✓	✓	
Installation of 3 PT 100 resistance thermometers <sup>7)</sup>	A60														✓	✓	✓	✓	✓	✓	
Installation of 6 PT 100 resistance thermometers in stator winding <sup>7)</sup>	A61														✓	✓	✓	✓	✓	✓	
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings <sup>7)</sup>	A72														✓	✓	✓	✓	✓	✓	
Installation of 2 PT 100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings <sup>7)</sup>	A78														✓	✓	✓	✓	✓	✓	
Installation of 2 PT 100 double screw-in resistance thermometers (three-wire circuit) for rolling-contact bearings <sup>7)</sup>	A80														✓	✓	✓	✓	✓	✓	

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6																		
												1LG6 (cast-iron)						
Motor connection and connection box																		
Two-part plate on connection box	K06											–	✓	✓	✓	✓	✓	✓
Connection box on RHS	K09											✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10											✓	✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11											✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15											✓	✓	✓	□	□	□	□
One cable gland, metal <sup>8)</sup>	K54											✓	✓	✓	✓	✓	✓	✓
Cable gland, maximum configuration <sup>8)</sup>	K55											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Rotation of the connection box through 90°, entry from DE	K83											✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84											✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85											✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00											✓	✓	✓	✓	✓	✓	✓
Auxiliary connection box	L97											✓	✓	✓	✓	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47											–	–	–	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>	✓ <sup>9)</sup>
Windings and insulation																		
Increased air humidity/temperature with 30 to 60 g water per m³ of air	C19											✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22											✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23											✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24											✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25											✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per per m³ of air	C26											✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with a higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA .... m above sea level											✓	✓	✓	✓	✓	✓	✓
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 ....											✓	✓	✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray	K26											✓	✓	✓	✓	✓	✓	✓
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 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 ....											✓	✓	✓	✓	✓	✓	✓
Offshore special finish	M91											✓	✓	✓	✓	✓	✓	✓
Sea air resistant special finish	M94											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Unpainted (only cast-iron parts primed)	K23											○	○	○	○	○	○	○
Unpainted, only primed	K24											✓	✓	✓	✓	✓	✓	✓

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6																
		1LG6 (cast-iron)														
Special technology																
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 <sup>10)</sup>	H86	✓✓✓✓✓✓														
Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2 <sup>11)</sup>	M95	– – ✓✓✓✓														
Mounting of explosion-proof separately driven fan II 2D for use in Zone 21 <sup>11)</sup>	M96	– – ✓✓✓✓														
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 <sup>11)</sup>	M97	✓✓✓✓✓✓														
Mechanical design and degrees of 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 and 2-pole motors	K17	✓✓✓✓✓✓														
Low-noise version for 2-pole motors with clockwise direction of rotation <sup>12)</sup>	K37	– – – – – –														
Low-noise version for 2-pole motors with counter-clockwise direction of rotation <sup>12)</sup>	K38	– – – – – –														
IP65 degree of protection <sup>13)</sup>	K50	✓✓✓✓✓✓														
IP56 degree of protection (non-heavy-sea) <sup>14)</sup>	K52	✓✓✓✓✓✓														
Condensation water holes <sup>15)</sup>	L12	□ □ □ □ □ □														
Rust-resistant screws (externally)	M27	✓✓✓✓✓✓														
Mechanical protection for encoder <sup>16)</sup>	M68	✓✓✓✓✓✓														
Coolant temperature and site altitude																
Coolant temperature –40 °C to +40 °C for EX motor <sup>17)</sup>	D19	✓✓✓✓✓✓														
Designs in accordance with standards and specifications																
Electrical according to NEMA MG1-12 (standard version with EPACT)	D30	□ □ □ □ □ □														
Ex certification for China (only valid for Zone 2)	D32	✓✓✓✓✓✓														
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	✓✓✓✓✓✓														
Bearing design for increased cantilever forces <sup>18)</sup>	K20	✓✓✓✓✓✓														
Special bearing for DE and NDE, bearing size	K36	✓✓✓✓✓ <sup>19)</sup> ✓ <sup>19)</sup>														
Regreasing device	K40	✓✓✓✓□□														
Located bearing DE	K94	✓✓✓✓✓✓														
Located bearing NDE	L04	□ □ □ □ □ □														
Insulated bearing cartridge	L27	– – ✓✓✓✓														
Balance and vibration quantity																
Vibration quantity A		□ □ □ □ □ □														
Vibration quantity B <sup>20)</sup>	K02	✓✓✓✓✓✓														
Full key balancing	L68	✓✓✓✓✓✓														
Balancing without key	M37	✓✓✓✓✓✓														
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors <sup>21)</sup>	K04	✓✓✓✓✓✓														
Second standard shaft extension <sup>22)</sup>	K16	✓✓✓✓✓✓														
Shaft extension with standard dimensions without featherkey way	K42	✓✓✓✓✓✓														
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	✓✓✓✓✓✓														
Non-standard cylindrical shaft extension <sup>23)</sup>	Y55 • and identification code	✓✓✓✓✓✓														

Special versions	Additional identification code <b>-Z</b> 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 motors in Zones 2, 21 and 22 with type of protection “n” or protection against dust explosions – Cast-iron series 1LG6																	
		1LG6 (cast-iron)															
Heating and ventilation																	
Metal external fan <sup>24)</sup>	K35																
Anti-condensation heater, Ex. 230 V	M15	✓✓✓✓✓✓															
Anti-condensation heater, Ex. 115 V	M14	O. R. O. R. O. R. O. R. O. R. O. R. O. R. O. R.															
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code	– – ✓✓✓✓															
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06	✓✓✓✓✓✓															
Second rating plate, loose	K31	✓✓✓✓✓✓															
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	✓✓✓✓✓✓															
Extra rating plate with identification code	Y82 • and identification code	✓✓✓✓✓✓															
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code	✓✓✓✓✓✓															
Packaging, safety notes, documentation and test certificates																	
Acceptance test certificate 3.1 according to EN 10204	B02	✓✓✓✓✓✓															
Operating instructions German/English enclosed in print	B23	□□□□□□															
Type test with heat run for horizontal motors, with acceptance	F83	✓✓✓✓✓✓															
Connected in star for dispatch	M32	✓✓✓✓✓✓															
Connected in delta for dispatch	M33	✓✓□□□□															

- 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



- 1) Only permitted for use in accordance with temperature class 130 (B).
- 2) These motors do not have a rated voltage range stamped on the rating plate.
- 3) According to the standard, the motor and converter must be tested as a unit. A "Manufacturer test certificate" is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converter. Please inquire in the case of a non-Siemens converter (additional charge).
- 4) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. Derating information is available on request.
- 5) In combination with order codes **D19, K30, M95, M96** and **M97** please inquire. Not possible in combination with order codes **D32, K50** and **K52**.
- 6) Zone 21 takes into account conducting and non-conducting dust.
- 7) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended. When used in hazardous areas, a certified tripping unit is required. KTY 84-130 and PT 100 are not permitted as sole protection. Full motor protection for mains-fed operation implemented only with PTC thermistors, please inquire.
- 8) For 1LG6 motors, additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a cable entry in the standard version.
- 9) Standard with designs for Zone 2, Zone 21 and VIK.
- 10) In combination with order codes **C19, C26, L27, M95, M96** and **M97** please inquire.  
Not possible in combination with order code **K16**.  
Furthermore a combination with protective cover is not possible. Therefore a suitable cover must be implemented by the end user in vertical mounting position to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 11) In combination with order codes **C19, C22, C23, C24, C25, C26, D19, H86, K50** and **K52** please inquire.  
Not possible in combination with order code **K16**.  
The type of protection of the separately driven fan must correspond to the type of protection of the motor.
- 12) Not necessary for 1LG6 motors because these motors are already noise optimized.
- 13) Order code **K50** (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 14) Order code **K52** IP56 degree of protection (non-heavy-sea) is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).
- 15) When supplied the condensation drainage holes are 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.
- 16) 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 cover.
- 17) Not possible in combination with order code **L03**.
- 18) 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**.
- 19) Additional charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 20) Can be combined with deep-groove bearings of series 60..., 62... and 63... Not possible with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
- 21) Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **K20**).
- 22) 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.
- 23) When motors which have a longer or shorter shaft extension than normal are ordered, 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 dimension 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".
- 24) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with the low-noise version – order code **K37** or **K38**.