#### 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 Order No.	Additional identifica- tion code with order code and plain text if required		Motor type frame si	ze			
				315	355	400	450	
Self-ventilated motors for Self-ventilated motors for	mains-fec converter	l operation - -fed operatio	- Cast-ir on – Cas	on series 1LA8 st-iron series 1L/	48			
				1LA8				
Voltage at 60 Hz								
380 V∆/660 VY: 50 Hz output <sup>1</sup> )	9	L2C		1	1	1	1	
380 V∆/660 VY: 60 Hz output <sup>1</sup> )	9	L2D		✓	1	✓	V	
440 VΔ; 50 Hz output <sup>1)</sup>	9	L2R		1	1	1	✓	
440 VΔ; 60 Hz output <sup>1)</sup>	9	L2X		1	1	✓	✓	
460 V∆; 50 Hz output <sup>1)</sup>	9	L2T		1	1	✓	✓	
460 VΔ; 60 Hz output <sup>1)</sup>	9	L2F		1	1	1	✓	
575 V∆; 50 Hz output	9	L2V		1	1	✓	✓	
575 V∆; 60 Hz output	9	L2M		1	1	1	✓	
Non-standard voltage and/or f	requencies							
Standard winding (winding according to voltage code 0, 4, 5, 6, 7 or 8; rating plate will be stamped in accordance with order) $^{21}$	9	L8Y •		1	1	1	J	
Non-standard winding for vol- tages between 380 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		1	J	J.	1	
Forced-air cooled motors	with mou	nted separat	tely driv	en fan for conve	rter-fed opera	ition – Cast-iron ser	ies 1PQ8	
				1PQ8				
Voltage at 60 Hz								
380 V∆/660 VY: 50 Hz output <sup>1)</sup>	9	L2C		1	1	V	V	
380 V∆/660 VY; 60 Hz output <sup>1)</sup>	9	L2D		✓	1	1	V	
440 V∆; 50 Hz output <sup>1)</sup>	9	L2R		1	1	1	1	
440 V∆; 60 Hz output <sup>1)</sup>	9	L2X		1	1	1	1	
460 V∆; 50 Hz output <sup>1)</sup>	9	L2T		1	1	1	1	
460 VΔ; 60 Hz output <sup>1)</sup>	9	L2F		1	1	1	1	
575 V∆; 50 Hz output	9	L2V		1	1	1	1	
575 VΔ; 60 Hz output	9	L2M		1	1	1	1	
Non-standard voltage and/or f	requencies	i						
Standard winding (winding according to voltage code 4, 5, 7 or 8; rating plate will be stamped in accordance with order) <sup>2</sup>	9	L8Y •		1	1	1	J	
Non-standard winding for vol- tages between 380 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		1	1	1	1	

✓ With additional charge

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

#### Note:

The order codes listed above are only valid for motor series 1PQ8 with forced-air cooled motor.

The required voltage/frequency according to order code Y81 "Separately driven fan with non-standard voltage/frequency" must be ordered in plain text with indication of the voltage, frequency and circuit.

1) Only possible with rated outputs of up to 630 kW.

<sup>2)</sup> Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

Special versions	Voltage code 11th position of Order No.	Additional identifica- tion code with order code and plain text if required		Motor type frame siz	e		
				315	355	400	450
Self-ventilated motors wit	h through	ventilation	n for main	s-fed and conver	ter-fed operation –	Cast-iron series 1L	L8
				1LL8			
Voltage at 60 Hz							
380 V∆/660 VY: 50 Hz output <sup>1)</sup>	9	L2C		1	✓ <sup>3)</sup>	✓ <sup>3)</sup>	✓ <sup>3)</sup>
380 V∆/660 VY; 60 Hz output <sup>1)</sup>	9	L2D		1	1	1	1
440 VΔ; 50 Hz output <sup>1)</sup>	9	L2R		1	1	1	✓
440 VΔ; 60 Hz output <sup>1)</sup>	9	L2X		1	1	✓	✓
460 VΔ; 50 Hz output <sup>1)</sup>	9	L2T		1	1	1	✓
460 VΔ; 60 Hz output <sup>1)</sup>	9	L2F		1	1	1	1
575 VΔ; 50 Hz output	9	L2V		1	1	✓	1
575 VΔ; 60 Hz output	9	L2M		1	1	✓	✓
Non-standard voltage and/or f	requencies	;					
Standard winding (winding according to voltage code 0, 5 or 6; rating plate will be stamped in accordance with order) <sup>2)</sup>	9	L8Y •		1	1	1	J
Non-standard winding for vol- tages between 380 and 690 V (voltages outside this range are available on request) <sup>2)</sup>	9	L1Y •		1	1	1	<i>J</i>

1

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

- 1) Only possible with rated outputs of up to 630 kW.
- 2) Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.
- 3) Not possible for 2-pole motors in 60 Hz version of frame size 355 and above.

Options

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

options of order codes (supplet		require	<u>u)</u>							
Special versions	Additional identifica- tion code -Z with order code and plain text if required		Motor type	frame size						
			315	355	400	450	315	355	400	450
Self-ventilated motors for mains	s-fed and o	conver	ter-fed op	eration 1L	A8					
			<b>1LA8</b> Mains-fed	operation			1LA8 Converter-1	fed operatior	า	
Standardline										
Standardline version <sup>1)</sup>	B20		0	0	-	-	0	0	-	-
Motor protection										
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping^{2)}	A12									
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>3)</sup>	A23		0	0	0	0	0	0	0	0
Installation of 6 PT 100 resistance thermometers in stator winding <sup>3)</sup>	A61		1	1	1	1	1	1	1	1
Installation of 6 resistance thermometers PT100 in stator winding, 3-wire input from auxiliary terminal box (Option M50 or M88)	A64	New!	V	1	1	1	1	1	1	1
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings	A72		1	1	1	1	1	1	1	1
Installation of 2 screw-in resis- tance thermometers PT100 for rolling-contact bearings, in 3- wire input from auxiliary termi- nal box (Option M50 or M88)	A78	New!	V	1	1	<i>✓</i>	1	1	1	
6x PT100 Smart transmitter – 40 to +140 °C Rosemount <sup>19)</sup>	M62	New!	1	1	1	1	1	1	1	1

# Options

Options or order codes (supplement -Z is required)

Special versions	Additional identifica- tion code -Z with order code and plain text if required		Motor type	frame size						
			315	355	400	450	315	355	400	450
Self-ventilated motors for mains	-fed and c	onver	ter-fed ope	eration 1LA	48					
			1LA8 Mains-fed c	peration			1LA8 Converter-fe	ed operation		
Motor connection and connection bo	x									
Two-part plate on connection box	K06		✓ <sup>4)</sup>	1	1	1	O. R.	O. R.	0. R.	0. R.
Undrilled entry plate	L01		O <sup>4)</sup>	0	0	0	O <sup>4)</sup>	0	0	0
Connection box on RHS	K09									
Connection box on LHS	K10		0	0	0	0	0	0	0	0
Connection box above (1XB1 634 connection box) <sup>5)</sup>	K11		1	1	1	1	1	1	1	1
Cable gland DIN 89280, maximum configuration	K57		1	1	1	1	1	1	1	1
Rotation of the connection box through 90°, entry from DE	K83		0	0	0	0	0	0	0	0
Rotation of the connection box through 90°, entry from NDE	K84		0	0	0	0	0	0	0	0
Rotation of connection box through 180°	K85		0	0	0	0	0	0	0	0
Auxiliary connection box 1XB9 015 (stainless steel)	M51	New!	1	1	1	1	1	1	1	1
Larger connection box (1XB1 621 connection box)	M58		1	<b>□</b> <sup>6)</sup>	-	-	1	□ <sup>6)</sup>	-	-
Flange version A660 instead of standard version <sup>20)</sup>	M61	New!	1	1	-	-	1	1	-	-
Larger connection box (1XB1 631 connection box)	L00		1	✓ <sup>6)</sup>			1	✓ <sup>6)</sup>		
6 cables protruding, 1.5 m long	L48		O. R.	0. R.	0. R.	0. R.	0. R.	0. R.	0. R.	0. R.
6 cables protruding, 3 m long	L49		O. R.	0. R.	O. R.	O. R.	O. R.	0. R.	0. R.	0. R.
Auxiliary connection box 1XB9 016 (cast-iron)	M50		1	1	1	1	1	1	1	1
Auxiliary connection box 1XB3 020 <sup>7)</sup>	L97		1	1	1	1	1	1	1	1
Auxiliary connection box 1XB9 014 (aluminum)	M88		1	1	1	1	1	1	1	1
Connection box on NDE	M64		1	1	1	1	1	1	1	✓
Windings and insulation										
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF 1.1, SF 1.05 from frame size 400) <sup>8)</sup>	C11		1	1	1	1	-	-	-	-
Temperature class 155 (F), used acc. to 155 (F), with increased output (10 %, 5 % from frame size 400) <sup>8)</sup>	C12		1	1	1	1	-	-	-	-
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature (55 °C, 50 °C from frame size 400) <sup>8)</sup>	C13		٠ 	1	1	1	-	-	-	-
Temperature class 180 (H), used acc. to 155 (F), with service factor	C14		1	1	1	1	1	1	1	1

(SF 1.1)<sup>8)</sup>

Special versions	Additional identifica- tion code - <b>Z</b> with order code and plain text if required	Motor ty	pe frame siz	e					
Colf wantileted metave for main		315	355	400	450	315	355	400	450
Self-ventilated motors for main	s-fed and co	nverter-fed o	peration 1	ILA8		41.40			
Colors and naint finish		Mains-fe	d operation			Converte	er-fed operat	ion	
Standard finish in BAL 7030									
stone gray			-		-	-	-	-	-
Standard paint finish in other colors	<b>Y53</b> • and standard finish RAL	5	1	1	1	1	1	1	1
Special finish in RAL 7030 stone gray	K26	1	1	1	1	1	1	1	1
Special finish in other colors	<b>Y54</b> • and special finish RAL	1	1	1	1	1	1	1	1
Unpainted (only cast iron parts primed)	K23	0	0	0	0	0	0	0	0
Special technology	47	O P		O P	O P	O P	O P	O P	
(incl. brake of Stromag)	N4/	U. n.	U. n.	U. n.	U. n.	U. n.	U. n.	U. n.	U. n.
Mounting of LL 861 900 220 rotary pulse encoder	H70	-	-	-	-	1	1	1	1
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	-	-	-	-	1	1	1	1
Prepared for mounting LL 861 900 220	H78	-	-	-	-	1	1	1	1
Prepared for mounting HOG 10 D 1024 I	H80	-	-	-	-	1	1	1	1
Mounting a special type of rotary pulse encoder	<b>Y70</b> • and encoder designa- tion	-	-	-	-	O. R.	O. R.	O. R.	O. R.
Mechanical design and degrees of p	protection								
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	~				1			•
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	1	0	0	0	1	0	0	0
IP56 degree of protection (non-heavy-sea)	K52	1	1	1	1	1	1	1	1
Non-rusting screws (externally)	M27	1	1	1	1	1	1	1	1
Coolant temperature and site altitud	le	1	,	,	,	1			,
-40 to +40 °C	D03	~	~	~	~	~	1	1	~
Coolant temperature -30 to +40 °C	D04	1	1	1	1	1	1	1	1
Coolant temperature 45 °C, derating 4 % <sup>9)</sup>	D11	0	0	0	0	0	0	0	0
Coolant temperature 50 °C, derating 8 % <sup>9)</sup>	D12	0	0	0	0	0	0	0	0
Coolant temperature 55 °C, derating 13 % <sup>9)</sup>	D13	0	0	0	0	0	0	0	0
Coolant temperature 60 °C, derating 18 % <sup>9)</sup>	D14	0	0	0	0	0	0	0	0
Designs in accordance with standar	ds and specif	ications							
Electrical according to NEMA MG1-12	D30	1							
"Recognition Mark"	D31	/							
Canadian regulations (CSA)	D40	1				1			

For legend and footnotes, see Page 7.

Special versions	Additional identifica- tion code -Z with order code and plain text if required	Motor typ	e frame size						
		315	355	400	450	315	355	400	450
Self-ventilated motors for mains	-fed and conver	ter-fed op	peration 1L	A8					
		1LA8 Mains-fed operation				1LA8 Converter-	fed operatior	ı	

			Mains-fed o	operation			Converter-f	ed operation	ו	
Design for Zones 1, 2 and 22 according	ng to ATEX	10)								
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15 <sup>11</sup> ) <sup>12</sup> ) <sup>13</sup>	M72		1	1	1	1	-	-	-	-
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>11)</sup> <sup>12)</sup> <sup>13)</sup> <sup>14)</sup>	M73		-	-	-	-	O. R.	O. R.	O. R.	O. R.
Design for Zone 22 for non-conducting dust (IP55) for mains-fed operation <sup>13)</sup>	M35		1	1	1	1	-	-	-	-
Design for Zone 22 for non-conducting dust (IP55) for converter-fed operation <sup>12)</sup> <sup>13)</sup>	M39		-	-	-	-	1	1	1	1
VIK version <sup>13) 15)</sup>	K30		1	1	_	_	O. R.	O. R.	_	_
Stamping of Ex nA II on VIK rating plate	C27		1	1	-	-	0. R.	0. R.	-	-
Bearings and lubrication										
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		1	1	1	1	1	1	1	1
Bearing design for increased cantilever forces <sup>16)</sup>	K20		1	1	-	-	1	1	-	-
Balance and vibration quantity										
Vibration quantity level B	K02		1	1	1	1	1	1	1	1
Full key balancing	L68		1	1	1	1	1	1	✓	1
Shaft and rotor										
Second standard shaft extension <sup>17)</sup>	K16		1	1	1	1	1	1	1	✓
Shaft extension with standard dimensions, without featherkey way	K42		1	1	1	1	1	1	1	1
Non-standard cylindrical shaft extension	<b>Y55</b> • and identification code		1	1	1	1	1	1	1	1
Heating and ventilation										
Metal external fan	K35		1	1	1	1	1	1	1	✓
Anti-condensation heaters for 230 V	K45		1	1	✓	1	1	1	✓	✓
Anti-condensation heaters for 115 V	K46		1	1	1	1	1	✓	✓	1
Rating plate and extra rating plates										
Second rating plate, loose	K31		1	1	1	1	1	1	1	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identifica- tion code		1	1	1	1	1	1	1	1
Extra rating plate with identification code	Y82 • and identifica- tion code		1	1	1	1	1	1	1	1
Packaging, safety notes, documentat	ion and test	t certifie	cates 18)							
Document – Electrical data sheet	B31		1	1	1	1	1	1	✓	1
Document - Order dimension drawing	B32		1	1	1	1	1	1	1	1
Document – Load characteristics	B37		O. R.	0. R.	0. R.	0. R.	O. R.	0. R.	0. R.	0. R.
Standard test (routine test) with acceptance	F01		1	1	1	1	1	1	1	1
Visual acceptance and report handover with acceptance	F03		1	1	1	1	1	1	1	1
Temperature-rise test, without acceptance	F04		1	1	1	1	1	1	1	1
Temperature-rise test, with acceptance	F05		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, no noise analysis, no acceptance	F28		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, no noise analysis, with acceptance	F29		1	1	1	5	1	1	1	1

Special versions	Additional identifica- tion code - <b>Z</b> with order code and plain text if required	Motor ty	vpe frame si	ze					
		315	355	400	450	315	355	400	450
Self-ventilated motors for mains	-fed and con	verter-fed	operation	1LA8					
		<b>1LA8</b> Mains-f	ed operatior	า		1LA8 Convert	ter-fed opera	tion	
Packaging, safety notes, documenta	tion and test co	ertificates 18)	(continued)	1					
Noise measurement in no-load operation, with noise analysis, without acceptance	F62	1	1	1	1	1	1	1	✓
Noise measurement in no-load operation, with noise analysis, with acceptance	F63	1	1	1	1	1	1	1	√
Recording of current and torque curves with torque metering shaft during starting, without acceptance	F34	1	1	1	1	-	-	-	-
Recording of current and torque curves with torque metering shaft	F35	1	1	1	1	-	-	-	-

1

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1

moto	rs, with acceptance
	Standard version

motors, without acceptance Type test with heat run for vertical

Without additional charge

during starting, with acceptance Measurement of locked-rotor torque

and current, without acceptance Measurement of locked-rotor torque

Type test with heat run for horizontal

and current, with acceptance Type test with heat run for horizontal

motors, without acceptance

motors, with acceptance Type test with heat run for vertical

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

F52

F53

F82

F83

F92

F93

1

1

1

1

1

1

- O. R. Possible on request
- With additional charge
- Not possible
- <sup>1)</sup> For 4-pole version only, type of construction IM B3, 400 VΔ/690 VY or 500 VΔ voltage (no special insulation). Only the following short codes can be ordered in combination with the *Standardline*: A23, A61, A72, G50, H70, H73, K09, K10, K45, K46, K83, K84, K85, L00, L97, M58 (only frame size 315), M88, Y53.
- <sup>2)</sup> Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- <sup>3)</sup> The standard thermistors are omitted. If PTC thermistors are required as well as KTYs or PT100s, this must be specified in the order in plain text. A combination of A12 and A61 or A12 and A23 is possible on request for an additional charge.
- <sup>4)</sup> Only possible in combination with the larger connection boxes 1XB1 621 or 1XB1 631 (order codes M58 or L00).
- <sup>5)</sup> A combination with the order codes M88 and M50 is not possible. Connection box 1XP1 634 can be rotated through 4 x 90°. Cable entry is from NDE or the delivery position. Dimension drawings available on request.
- <sup>6)</sup> With 1LA8 357-2 and 1LA8 357-4, connection box 1XB1 631 is supplied in the standard version.
- 7) VIK version is not possible.
- <sup>8)</sup> Use according to temperature class 180 (H) is not possible. All 400 V version are available on request. Due to the rated current, a larger connection box of type 1XB9 600, which is part of order code C14, is generally provided for frame sizes 400 (2- and 4-pole) and 450 (all no. of poles).
- <sup>9)</sup> Site altitude up to 1000 m above sea level.
- <sup>10)</sup> Explosion-protected encoders are available on request.

- <sup>11)</sup> Only admissible for use in accordance with temperature class 130 (B). 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 and 22. Derating data are available on request.
- <sup>12)</sup> These motors do not have a rated voltage range stamped on the rating plate.
- <sup>13)</sup> For options K30, M35, M39, M72, M73 an additional metal external fan order code K35 must be ordered.
- <sup>14)</sup> In the order, the "Speed range and torque characteristic" must be specified in plain text. A system test is necessary for *M* = constant.
- <sup>15)</sup> The VIK version comprises Zone 2 for mains-fed operation without Ex nA II marking on rating plate. For 2-pole motors of frame size 315, the low-noise version is also required. Order code **K37** or **K38** and additionally the metal external fan order code **K35**. Note the specified output and dimensions. For 1LA8 353 to 1LA8 357 motors, the connection box cannot be rotated by 4 x 90°.
- <sup>16)</sup> Not possible for 2-pole motors and motors of vertical type of construction.
- <sup>17)</sup> Please inquire in the case of 2-pole motors and motors in vertical type of construction.
- <sup>18)</sup> Type testing is also performed for converter-fed operation.
- <sup>19)</sup> Only possible in combination with the stainless steel auxiliary connection box (order code M51).
- <sup>20)</sup> Only possible for 4 and 6-pole 1LA8 or 1PQ8 motors with frame size 315 or 355 in versions IM V1 or IM B35.

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

Special versions	Additional identifica- tion code -Z with order code and plain text if		Motor type f	irame size		
	requirea		015	055	400	450
Forced air cooled motors with me	unted con	orotoly	315 drivon fon	355	400 tor fod on	450
Forced-air cooled motors with mo	unied sep	aratery		TOT COTIVE	ter-red ope	
			Converter-fe	ed operation		
Standardline						
Standardline version	B20		-	-	-	-
Motor protection						
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping <sup>1)</sup>	A12					
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>2)</sup>	A23		0	0	0	0
Installation of 6 PT 100 resistance thermometers in stator winding <sup>2)</sup>	A61		1	1	1	✓
Installation of 6 resistance thermometers PT100 in stator winding, 3-wire input from auxiliary terminal box (Option M50 or M88)	A64	New!	<i>J</i>	1	1	/
Installation of 2 screw-in resis- tance thermometers PT100 for rolling-contact bearings, in 3- wire input from auxiliary termi- nal box (Option M50 or M88)	A78	New!	V	V	1	
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings	A72		1	1	1	1
6x PT100 Smart transmitter -40 to +140 °C Rosemount <sup>17)</sup>	M62	New!	1	1	1	4
Motor connection and connection box						
Two-part plate on connection box	K06		0. R.	0. R.	0. R.	0. R.
Undrilled entry plate	L01		O <sup>3)</sup>	0	0	0
Connection box on RHS	K09					
Connection box on LHS	K10		0	0	0	0
(1XB1 634 connection box) <sup>4)</sup>	NII		~	~	~	*
Cable gland, maximum configuration	K57		1	1	1	✓
Rotation of the connection box through 90°, entry from DE	K83		0	0	0	0
Rotation of the connection box through 90°, entry from NDE	K84		0	0	0	0
Rotation of connection box through 180°	K85		0	0	0	0
Larger connection box (1XB1 621 connection box)	M58		1	<b>D</b> <sup>5)</sup>	-	-
Larger connection box (1XB1 631 connection box)	L00		✓ ○ □	<b>7</b> <sup>3)</sup>		
6 cables protruding, 1.5 m long	L48		0. R.	0. R.	0. R.	0. R.
Auxiliary connection box 1VR0.016	L49 M50		0. H.	0. H.	0. H.	U. n.
(cast-iron)	WOO		·	v	v	
Auxiliary connection box 1XB3 020	L97		1	1	1	✓
Auxiliary connection box 1XB9 015 (stainless steel)	M51	New!	1	1	1	٠
Flange version A660 instead of standard version <sup>18)</sup>	M61	New!	1	1	-	-
Auxiliary connection box 1XB9 014 (aluminum)	M88		1	1	1	✓
Connection box on NDE	M64		1	1	1	

Special versions	Additional identifica- tion code -Z with order code and plain text if required	Motor type	frame size		
		315	355	400	450
Forced-air cooled motors with mo	unted separately	v driven far	n for conve	rter-fed op	eration 1PQ8
		1PQ8			
		Converter-f	ed operation		
Windings and insulation	014		,		· ·
used acc. to 155 (F), with service factor (SF 1.1) <sup>6)</sup>	C14	~	V	~	<b>v</b>
Colors and paint finish					
Standard finish in RAL 7030 stone gray					
Standard paint finish in other colors	<b>Y53</b> • and standard finish RAL	✓	✓	✓	
Special finish in RAL 7030 stone gray	K26	1	1	1	<i>✓</i>
Special finish in other colors	<b>Y54</b> ● and special fin- ish RAL	✓	1	1	✓
Unpainted (only cast-iron parts primed)	K23	0	0	0	0
Special technology					
Mounting of brake (incl. brake of Stromag)	H47	O. R.	O. R.	O. R.	O. R.
Mounting of LL 861 900 220 rotary pulse encoder	H70	1	1	1	×
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	1	1	1	<ul> <li>Image: A start of the start of</li></ul>
Prepared for mounting LL 861 900 220	H78	1	✓	1	1
Prepared for mounting HOG 10 D 1024 I	H80	1	1	1	1
Mounting a special type of rotary pulse encoder	<b>Y70</b> • and encoder designa- tion	O. R.	O. R.	O. R.	O. R.
Mechanical design and degrees of prot	ection				
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	-	-	-	-
IP56 degree of protection (non-heavy-sea)	K52	0. R.	O. R.	0. R.	O. R.
Non-rusting screws (externally) 7)	M27	1	1	1	1
Coolant temperature and site altitude					
Coolant temperature -40 to +40 °C	D03	0. R.	0. R.	0. R.	O. R.
Coolant temperature -30 to +40 °C	D04	0. R.	0. R.	0. R.	O. R.
Coolant temperature 45 °C, derating 4 % <sup>8)</sup>	D11	0	0	0	0
Coolant temperature 50 °C, derating 8 % <sup>8)</sup>	D12	0	0	0	0
Coolant temperature 55 °C, derating 13 % <sup>8)</sup>	D13	0	0	0	0
Coolant temperature 60 °C, derating 18 % <sup>8)</sup>	D14	0	0	0	0

Special versions	Additional identifica- tion code - <b>Z</b> with order code and plain text if required	Motor typ	pe frame size			
		315	355	400	450	
Forced-air cooled motors with mo	unted separa	tely driven f	an for conv	verter-fed o	operation 1PQ8	
		1PQ8 Converte	er-fed operatio	on		
Designs in accordance with standards	and specification	ons				
Electrical according to NEMA MG1-12 <sup>9)</sup>	D30	1	1	1	1	
Design according to UL with "Recognition Mark"	D31	1	1	1	1	
Canadian regulations (CSA)	D40	1	1	1	1	
Design for Zones 2 and 22 according to	ATEX <sup>10)</sup>					
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15	M72	-	-	-	-	
Design for Zone 2 for converter-fed operation, reduced output Ex nA II T3 to IEC/EN 60079-15 <sup>11)</sup> <sup>12)</sup> <sup>13)</sup>	M73	0. R.	0. R.	0. R.	O. R.	
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	M39	-	-	-	-	
VIK version	K30	—	-	-	-	
Stamping of Ex nA II on VIK rating plate	C27	-	-	-	-	
Bearings and lubrication						
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	1	1	1	1	
Bearing design for increased cantilever forces <sup>14)</sup>	K20	1	1	-	-	
Balance and vibration quantity						
Vibration quantity level B	K02	1	✓	1	1	
Full key balancing	L68	1	1	1	1	
Shaft and rotor						
Second standard shaft extension	K16	-	-	-	-	
Shaft extension with standard dimensions, without featherkey way	K42	1	1	1	1	
Non-standard cylindrical shaft extension	<b>Y55</b> • and identifica-tion code	~	1	1	1	
Heating and ventilation						
Anti-condensation heaters for 230 V	K45	1	1	1	1	
Anti-condensation heaters for 115 V	K46	1	1	1	1	
Separately driven fan with non-standard voltage and/or frequency <sup>15</sup>	<b>Y81</b> • and identifica-tion code	~	1	1	1	
Rating plate and extra rating plates						
Second rating plate, loose	K31	1	✓	1	1	
Extra rating plate or rating plate with deviating rating plate data	<b>Y80</b> • and identifica-tion code	✓	1	1	1	
Extra rating plate with identification code	<b>Y82</b> • and identifica-tion code	1	1	1	1	
Packaging, safety notes, documentatio	n and test certi	ficates 16)				
Document - Electrical data sheet	B31	1	1	1	1	
Document - Order dimension drawing	B32	1	1	1	1	

Special versions	Additional identifica- tion code -Z with order code and plain text if required	Motor type t	frame size		
		315	355	400	450
Forced-air cooled motors with mo	unted separately	driven fan	for conve	rter-fed ope	eration 1PQ8
		1PQ8 Converter-fe	ed operation		
Packaging, safety notes, documentation	n and test certificat	es <sup>16)</sup> (contin	ued)		
Document – Load characteristics	B37	O. R.	0. R.	0. R.	O. R.
Normal inspection (routine inspection) with acceptance	F01	1	1	1	×
Visual acceptance and report handover with acceptance	F03	1	1	1	✓
Temperature-rise test, without acceptance	F04	1	1	1	✓
Temperature-rise test, with acceptance	F05	1	1	1	✓
Noise measurement in no-load operation, no noise analysis, no acceptance	F28	1	1	1	1
Noise measurement in no-load operation, no noise analysis, with acceptance	F29	1	1	1	✓
Noise measurement in no-load operation, with noise analysis, without acceptance	F62	1	1	1	✓
Noise measurement in no-load operation, with noise analysis, with acceptance	F63	1	1	1	<i>٧</i>
Recording of current and torque curves with torque metering shaft during starting, without acceptance	F34	-	-	-	-
Recording of current and torque curves with torque metering shaft during starting, with acceptance	F35	-	-	-	-
Measurement of locked-rotor torque and current, without acceptance	F52	-	-	-	-
Measurement of locked-rotor torque and current, with acceptance	F53	-	-	-	-
Type test with heat run for horizontal motors, without acceptance	F82	1	1	1	٧
Type test with heat run for horizontal motors, with acceptance	F83	1	1	1	<i>✓</i>
Type test with heat run for vertical motors, without acceptance	F92	1	1	1	<i>√</i>
Type test with heat run for vertical motors, with acceptance	F93	1	1	1	1

- Standard version
- Without additional charge
- This order code only determines the price of the version Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible
- Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- <sup>2)</sup> The standard thermistors are omitted. If PTC thermistors are required as well as KTYs or PT100s, this must be specified in the order in plain text. A combination of A12 and A61 or A12 and A23 is possible on request for an additional charge.
- Only possible in combination with the larger connection boxes 1XB1 621 or 1XB1 631 (order codes M58 or L00).
- <sup>4)</sup> A combination with the order codes **M88** and **M50** is not possible. Connection box 1XP1 634 can be rotated through 4 x 90°. Cable entry is from NDE or the delivery position. Dimension drawings available on request.
- <sup>5)</sup> With 1PQ8 357-2 and 1PQ8 357-4, connection box 1XB1 631 is supplied in the standard version.
- <sup>6)</sup> Use according to temperature class 180 (H) is not possible. All 400 V version are available on request. Due to the rated current, a larger connection box of type 1XB9 600, which is part of order code C14, is generally provided for frame sizes 400 (2- and 4-pole) and 450 (all no. of poles).
- 7) Only possible for main motor Not possible for separately driven fan.
- <sup>8)</sup> Site altitude up to 1000 m above sea level.

- Only possible for main motor Not possible for separately driven fan motor.
- <sup>10)</sup> Explosion-protected encoders are available on request.
- <sup>11)</sup> Only admissible for use in accordance with temperature class 130 (B). 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 and 22. Derating data are available on request.
- <sup>12)</sup> These motors do not have a rated voltage range stamped on the rating plate.
- <sup>13)</sup> In the order, the "Speed range and torque characteristic" must be specified in plain text. A system test is necessary for M = constant.
- <sup>14)</sup> Not possible for 2-pole motors and motors of vertical type of construction.
- <sup>15)</sup> When ordering, specifiy in plain text: Voltage, frequency and circuit.
- <sup>16)</sup> Type testing is also performed for converter-fed operation.
- <sup>17)</sup> Only possible in combination with the stainless steel auxiliary connection box (order code M51).
- <sup>18)</sup> Only possible for 4 and 6-pole 1LA8 or 1PQ8 motors with frame size 315 or 355 in versions IM V1 or IM B35.

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

Special versions	Additional identifica- tion code - <b>Z</b> with order code and plain text if required	Motor type	frame size						
		315	355	400	450	315	355	400	450

Self-ventilated motors with thro	ough venti	lation 1	for mains-	ted and co	nverter-fe	d operation	)			
			1LL8 Mains-fed o	operation			1LL8 Converter-fe	ed operation		
Standardline										
Standardline version	B20		-	-	-	-	-	-	-	-
Motor protection										
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping $^{1)}$	A12									
Motor temperature detection with embedded temperature sensor KTY 84-130 <sup>2)</sup>	A23		0	0	0	0	0	0	0	0
Installation of 6 PT 100 resistance thermometers in stator winding <sup>2)</sup>	A61		1	1	1	1	1	1	1	1
Installation of 6 resistance thermometers PT100 in stator winding, 3-wire input from auxiliary terminal box (order code M50 or M88)	A64	New!	V	1	1	1	V	V	1	1
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings	A72		1	1	1	1	1	1	1	1
Installation of 2 screw-in resis- tance thermometers PT100 for rolling-contact bearings, in 3- wire input from auxiliary termi- nal box (order code M50 or M88)	A78	New!	V	1	V	1	V	1	1	1
6x PT100 Smart transmitter – 40 to +140 °C Rosemount <sup>8)</sup>	M62	New!	1	1	1	1	1	1	1	1
Motor connection and connection b	ох									
Two-part plate on connection box	K06		1	1	1	1	0. R.	0. R.	0. R.	0. R.
Undrilled entry plate	L01		0	0	0	0	0	0	0	0
Connection box on RHS	K09									
Connection box on LHS	K10		0	0	0	0	0	0	0	0
Connection box above (1XB1 634 connection box) <sup>3)</sup>	K11		1	1	1	1	1	1	1	1
Cable gland, maximum configuration	K57		1	1	✓	1	1	1	1	1
Rotation of the connection box through 90°, entry from DE	K83		0	0	0	0	0	0	0	0
Rotation of the connection box through 90°, entry from NDE	K84		0	0	0	0	0	0	0	0
Rotation of connection box through 180°	K85		0	0	0	0	0	0	0	0
Larger connection box (1XB1 621 connection box)	M58		1	-	-	-		-	-	-
Larger connection box (1XB1 631 connection box)	L00		1	•	•	•	1			
6 cables protruding, 1.5 m long	L48		O. R.	O. R.	O. R.	O. R.	0. R.	0. R.	0. R.	0. R.
6 cables protruding, 3 m long	L49		0. R.	O. R.	O. R.	0. R.	0. R.	0. R.	0. R.	0. R.
Auxiliary connection box 1XB9 016 (cast-iron)	M50		1	1	1	1	1	1	1	1
Auxiliary connection box 1XB9 015 (stainless steel)	M51	New!	1	1	1	1	1	1	1	1
Auxiliary connection box 1XB3 020	L97		1	1	1	1	1	1	1	1
Auxiliary connection box 1XB9 014 (aluminum)	M88		1	1	1	1	1	1	1	1
Connection box on NDE	M64		1	1	1	1	1	1	1	1

Special versions	Additional identifica- tion code - <b>Z</b> with order code and plain text if required		Motor type frame size								
	- 1		315	355	400	450	315	355	400	450	
Self-ventilated motors with thro	ough ventilat	tion fe	or mains-f 1LL8 Mains-fed o	ed and con	nverter-fec	l operation	1LL8 Converter-fe	ed operation	_		
Windings and insulation											
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF 1.1, SF 1.05 from frame size 400) $^{4)}$	C11		1	<b>v</b>	1	1	-	-	-	-	
Temperature class 155 (F), used acc. to 155 (F), with increased output (10 %, 5 % from frame size 400) <sup>4)</sup>	C12		<i>s</i>	<i>✓</i>	1	1	-	-	-	-	
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature (55 °C, 50°C from frame size 400) $^{\rm 4)}$	C13		<i>√</i>	1	1	1	-	-	-	-	
Temperature class 180 (H), used acc. to 155 (F), with service factor (SF 1.1)	C14		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Colors and paint finish											
Standard finish in RAL 7030 stone gray											
Standard paint finish in other colors	<b>Y53</b> • and standard finish RAL		1	1	1	1	1	1	1	1	
Special finish in RAL 7030 stone gray	K26		1	1	1	1	1	1	1	1	
Special finish in other colors	<b>Y54 ●</b> and special finish RAL		✓	✓	1	<b>√</b>	1	1	1	1	
Unpainted (only cast iron parts primed)	К23		0	0	0	0	0	0	0	0	
Special technology Mounting of brake	H47		_	_	_	_	_	_	_	_	
(incl. brake of Stromag)	H70	_									
pulse encoder Mounting of HOG 10 D 1024 Litetary	H73	_					· ·	·	·	·	
pulse encoder Propared for mounting	H79	_		_	-	-	· · · · · · · · · · · · · · · · · · ·	·	• 	·	
LL 861 900 220 Prepared for mounting	H80	_					• ./	·	•	• -/	
HOG 10 D 1024 I	1100						•	•	•	•	
Mounting a special type of rotary pulse encoder	<b>Y70</b> • and encoder designa- tion		-	-	-	-	O. R.	O. R.	O. R.	O. R.	
Mechanical design and degrees of p	orotection										
Low-noise version for 2-pole motors with clockwise direction of rotation	K37		1	0	0	0	1	0	0	0	
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38		1	0	0	0	1	0	0	0	
IP56 degree of protection (non-heavy-sea)	K52		-	-	-	-	-	-	-	-	
Non-rusting screws (externally)	M27		1	1	1	1	1	1	1	1	
Coolant temperature and site altitud	e D02										
-40 to +40 °C	D03										
-30 to +40 °C	D04		-	-	-	-	-	-	-	-	
derating 4 % <sup>5)</sup>	ווט		0	0	0	0	0	0	0	0	
Coolant temperature 50 °C, derating 8 % <sup>5)</sup>	D12		0	0	0	0	0	0	0	0	
Coolant temperature 55 °C, derating 13 % <sup>5)</sup>	D13		0	0	0	0	0	0	0	0	
Coolant temperature 60 °C,	D14		0	0	0	0	0	0	0	0	

Coolant temperature 60 °C, derating 18 % <sup>5)</sup>

For legend and footnotes, see Page 15.

Special versions	Additional identifica- tion code -Z with order code and plain text if required		Motor type frame size									
			315	355	400	450	315	355	400	450		
Self-ventilated motors with thro	ough ventil	ation f	or mains-1	ied and co	nverter-feo	d operation						
			1LL8 Mains-fed c	peration			1LL8 Converter-fe	8 verter-fed operation				
Design in accordance with standard	s and specif	ication	s									
Electrical according to NEMA MG1-12	D30		✓	✓	1	1	1	1	1	1		
Design according to UL with "Recognition Mark"	D31		<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	1	<i>✓</i>	<i>✓</i>	1		
VIK version	K30		-	-	-	-	-	-	-	-		
Canadian regulations (CSA)	D40		1	1	1	1	✓	1	1	✓		
Designs for Zones 2 and 22 according	ng to ATEX											
Design for Zone 2 for mains-fed operation Ex nA II T3 to IEC/EN 60079-15	M72		-	-	-	-	-	-	-	-		
Design for Zone 2 for converter-fed operation, derating Ex nA II T3 to IEC/EN 60079-15	M73		-	-	-	-	-	-	-	-		
Design for Zone 22 for non-conduct- ing dust (IP55) for mains-fed operation	M35		-	-	-	-	-	-	-	-		
Design for Zone 22 for non-conduct- ing dust (IP55) for converter-fed operation	M39		-	-	-	-	-	-	-	-		
Stamping of Ex nA II on VIK rating plate	C27		-	-	-	-	-	-	-	-		
Bearings and lubrication												
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		1	1	1	1	1	1	1	<i>✓</i>		
Bearing design for increased cantilever forces	K20		-	-	-	-	-	-	-	-		
Balance and vibration quantity												
Vibration quantity level B	K02		1	1	1	1	✓	1	1	1		
Full key balancing	L68		1	1	1	1	1	1	1	1		
Shaft and rotor												
Second standard shaft extension <sup>6)</sup>	K16		<i>·</i>	<i>·</i>	<i>·</i>	<i>✓</i>	/	<i>·</i>	<i>·</i>	<u> </u>		
Shaft extension with standard dimensions, without featherkey way	K42		<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	1	<i>✓</i>	<i>✓</i>	<i>✓</i>		
Non-standard cylindrical shaft extension	<b>Y55</b> • and identifica-tion code		1	1	1	1	<i>✓</i>	1	1	1		
Heating and ventilation												
Metal external fan	K35		1	1	1	1	1	1	1	1		
Anti-condensation heaters for 230 V	K45		1	1	1	1	1	1	✓	1		
Anti-condensation heaters for 115 V	K46		1	1	1	1	✓	1	1	1		
Sheet metal fan cover	L36											
Rating plate and extra rating plates												
Second rating plate, loose	K31		/	V (	V	/	✓ ✓	V (	/	<u>/</u>		
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identifica- tion code		<b>v</b>		<b>v</b>		~		<b>~</b>	<i>,</i>		
Extra rating plate with identification code	<b>Y82</b> • and identification code		1	1	1	1	1	1	1	1		
Packaging, safety notes, documenta	tion and tes	t certifi	cates 7)									
Document - Electrical data sheet	B31		1	1	1	1	1	1	1	1		
Document - Order dimension drawing	B32		1	1	1	1	1	1	1	1		
Document – Load characteristics	B37		O. R.	O. R.	O. R.	O. R.	O. R.	0. R.	0. R.	O. R.		

Special versions	Additional identifica- tion code -Z with order code and plain text if required		Motor type	e frame si	ze					
			315	355	400	450	315	355	400	450
Self-ventilated motors with three	ough venti	lation f	or mains	-fed and	l converter-	·fed operati	on			
			1LL8 Mains-fed	operation	ו		1LL8 Convert	er-fed opera	tion	
Packaging, safety notes, documenta	ation and te	st certifi	icates ') (c	ontinued)						
Standard test (routine test) with acceptance	F01		1	1	1	1	1	1	1	1
Visual acceptance and report handover with acceptance	F03		1	1	1	1	1	1	1	1
Temperature-rise test, without acceptance	F04		1	1	1	1	1	1	1	1
Temperature-rise test, with acceptance	F05		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, no noise analysis, no acceptance	F28		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, no noise analysis, with acceptance	F29		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, with noise analysis, without acceptance	F62		1	1	1	1	1	1	1	1
Noise measurement in no-load operation, with noise analysis, with acceptance	F63		1	1	1	1	1	1	1	1
Recording of current and torque curves with torque metering shaft during starting, without acceptance	F34		1	1	1	1	-	-	-	-
Recording of current and torque curves with torque metering shaft during starting, with acceptance	F35		1	1	1	1	-	-	-	-
Measurement of locked-rotor torque and current, without acceptance	F52		1	1	1	1	-	-	-	-
Measurement of locked-rotor torque and current, with acceptance	F53		1	1	1	1	-	-	-	-
Type test with heat run for horizontal motors, without acceptance	F82		1	1	1	1	1	1	1	1
Type test with heat run for horizontal motors, with acceptance	F83		1	1	1	1	1	1	1	1
Type test with heat run for vertical motors, without acceptance	F92		1	1	1	1	1	1	1	1

1

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motors, with acceptanceStandard version

o Without additional charge

Type test with heat run for vertical

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

F93

O. R. Possible on request

✓ With additional charge

Not possible

- Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- <sup>2)</sup> The standard thermistors are omitted. If PTC thermistors are required as well as KTYs or PT100s, this must be specified in the order in plain text. A combination of A12 and A61 or A12 and A23 is possible on request for an additional charge.
- <sup>3)</sup> A combination with the order codes M88 and M50 is not possible. Connection box 1XP1 634 can be rotated through 4 x 90°. Cable entry is from NDE or the delivery position. Dimension drawings available on request.
- <sup>4)</sup> Use according to temperature class 180 (H) is not possible. All 400 V version are available on request. Due to the rated current, a larger connection box of type 1XB9 600, which is part of order code C14, is generally provided for frame sizes 400 (2- and 4-pole) and 450 (all no. of poles).
- 5) Site altitude 1000 m above sea level
- Please inquire in the case of 2-pole motors and motors in vertical type of construction.
- <sup>7)</sup> Type testing is also performed for converter-fed operation.
- Only possible in combination with the stainless steel auxiliary connection box (order code M51).