Technical specifications

LOHER CHEMSTAR and VARIO 1PS4 and 1PS5 motor series, type of protection "Explosion-proof enclosure"

LOHER CHEMSTAR and VARIO motors of the 1PS4 and 1PS5 series are surface-cooled motors in type of protection "Explosion-proof enclosure" Ex d. The CHEMSTAR motors can be designed in accordance with the current VIK recommendation ("Verband der Industriellen Energie- und Kraftwirtschaft e. V.", the Association of the Industrial Energy and Power Industry).

The motors are marked in accordance with EN 60079-0 Ed.2009 and EN 60079-1 with II 2G Ex de IIB T3-6 Gb or II 2G Ex de IIC T3-6 Gb for operation in Zone 1.

General technical specifications

LOHER CHEMSTAR and VARIO 1PS4 and 1PS5 motors	
Motor type	*D..L/D..W*
Frame size	71 … 500
Outputs	0.25 … 1120 kW
Temperature class	T1 … T6
Type of protection	II 2G Ex d(e) IIC Gb, IEC/EN 60079-0, IEC/EN 60079-1
Ex Zones	Gas Zone 1 optional, Dust Zone 22/21
Guidelines	94/9/EC (ATEX 95)
Cooling	Surface-cooled, water-jacket-cooled on request
No. of poles	2- … 12-pole, multi-pole + pole-changing versions on request
Voltage/frequency	All common voltages, and in 50 Hz and 60 Hz special designs on request
Degree of protection	IP55 to IP68
Type of construction	All common types of construction + special types of construction
Housing	Cast-iron or steel
Insulation	Class F utilized according to B

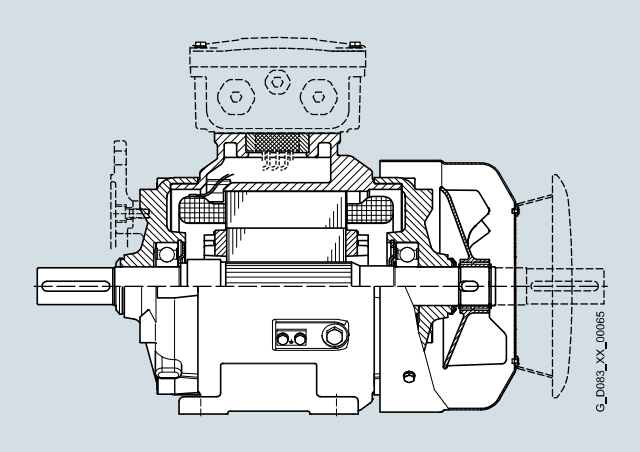
Special versions

- For outdoor temperatures -55 to +60 °C (other temperatures on request)
- Site altitude up to 3000 m (> 3000 m on request)
- Modified windings, for example, for increased ambient temperatures, site altitude for optimum electrical values
- Permanent load S1 as well as partial load operation, e.g. S2/S3/S6
- Drive-end located bearing; special bearing for increased axial/radial forces
- Large electrical variance, such as reduced starting current, modified torque curve, star-delta start-up, etc.
- CHEMSTAR: copper rotor as an option
- Metal fan in aluminum, steel or brass
- Monitoring devices such as Pt100, PTC, KTY winding/bearing, vibration monitoring, etc.
- Country-specific certificates such as EAC (Eurasian Customs Union) , NEPSI (China), China Energy Label, CCOE (India), IECEX (international)
- Version for offshore, on-deck and/or marine classifications
- Combination with brakes + rotary encoder + forced ventilation
- Enlarged connection system and/or larger terminal box for large cable cross-sections

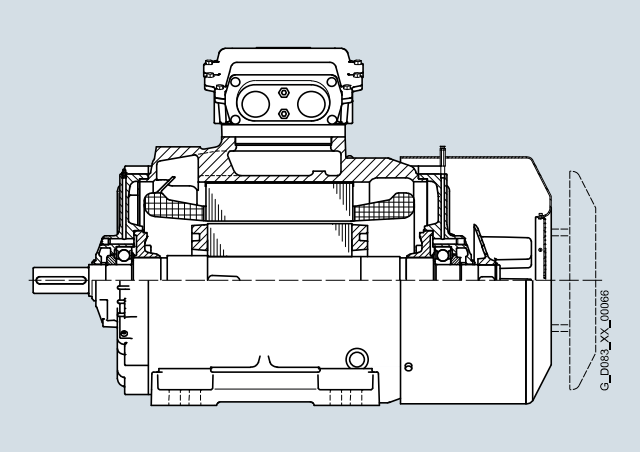
2

Technical specifications (continued)

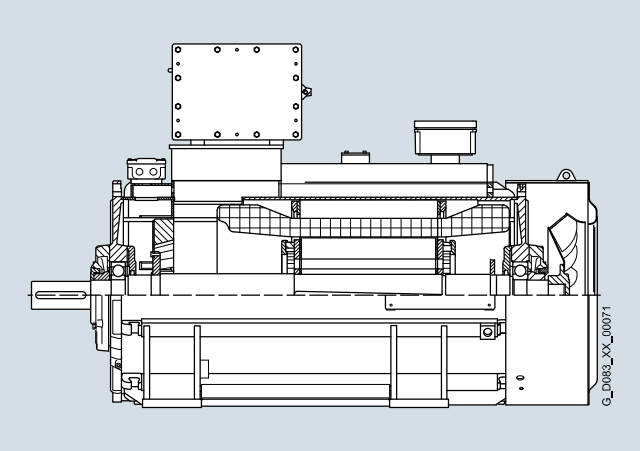
Mechanical design



Sectional view of CHEMSTAR 1PS5 three-phase motor,
frame sizes 71 to 132
Example: 1PS5131-0BD6.-4AA3 *(motor type: DNGW-132SR-02)*
7.5 kW, 2-pole



Sectional view of CHEMSTAR 1PS5 three-phase motor,
frame sizes 160 to 315
Example: 1PS5316-0BD6.-4AA3 *(motor type: DNGW-315LL-02)*
200 kW, 2-pole



Sectional view of VARIO 1PS4/5 three-phase motor,
frame sizes 355 to 500
Example: 1PS4356-0BH6.-4AA0 *(motor type: DNGL-355LB-02)*
315 kW, 2-pole

Housing, ventilation

Housing and fan for motors of the LOHER CHEMSTAR and VARIO 1PS5/1PS5 series

Frame size	Housing			Bearing plates	Fan cover	Fan [2]
	Material	Design of housing feet [1]	Surface	Material	Material	Material
LOHER CHEMSTAR						
71 … 160	Cast-iron	Cast	With cooling fins	Cast-iron	Sheet steel	Plastic
180 ... 315		Screwed on				Aluminum
355		Cast				Steel
LOHER VARIO						
355 … 450	Steel	Welded	With cooling fins	Cast-iron	Sheet steel	Steel
500 [3]				Steel, bearing hub in cast-iron		

[1] For designs with feet only.

[2] For specific operating conditions, the external fans can be constructed in aluminum for frame sizes 71 to 225 and in sheet steel for frame sizes 250 to 315. This applies in the case of increased coolant temperature in particular. The cooling air flow from NDE to DE must not be obstructed. The intake area in front of the fan cover must not be obstructed.

[3] Suitable for both directions of rotation, but LOHER VARIO 2- and 4-pole are only suitable for one direction of rotation.

Technical specifications (continued)

Protection against ingress of condensation

Condensation drainage holes must not be drilled into encapsulated explosion-proof motors, otherwise the type of protection can no longer be ensured. In frame size 250 and above, the explosion-proof encapsulated motors have separate chambers at the drive end (DE) and non-drive end (NDE) for collection of any condensation that may arise. This prevents possible damage to the winding as a result of condensation in the winding overhang spaces. In the case of smaller motors (frame size range 71 to 225), the risk of adverse effects from condensation is countered by applying increased humidity protection to the winding insulation.

In the standard version, the motor can be used in environments with up to 80 % relative humidity without the need for further measures. For operation at higher humidity levels, the hollow spaces and internal parts can be finished with special paint, which enables operation at up to 100 % humidity to be achieved as an option. In the CHEMSTAR motor series, an anti-condensation heater is not necessary in most cases. This is known as a "tropical insulation version".

Explosion-proof three-phase motors in type of protection Ex d for ambient temperatures down to -55 °C

Motors of the 1PS4/1PS5 series can also be designed for hazardous areas with ambient temperatures down to -55 °C.

Advantages	The motors can be used in hazardous areas at ambient temperatures down to -55 °C without the need for expensive additional heating. This saves on expensive switching and monitoring devices, the associated cables and leads, as well as heating energy.
Explosion protection	In accordance with European standards EN 60079-0, EN 60079-1, EN 60079-7
Marking	II 2G Ex de IIB T3-6 Gb or II 2G Ex de IIC T3-6 Gb
Certifications	EC type-examination certificate
Ambient temperature range	-55 to +60 °C
Type series	CHEMSTAR and VARIO 1PS4/1PS5 motors
Rated voltage U_{rated}	Up to 690 V
Design	Selection of materials for temperatures down to -55 °C Group IIC or IIB Optional version possible Motors with built-on components, such as brakes and speed encoders, cannot be supplied for ambient temperatures down to -55 °C.
Note	The fan must not be blocked by ice or snow.

2

Technical specifications (continued)

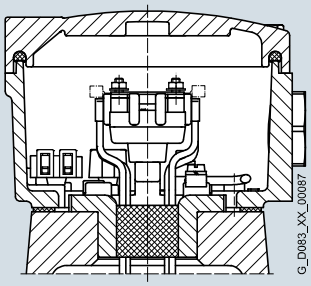
Terminal boxes

The terminal boxes comply with the type of protection "Increased safety" Ex e in accordance with EN 60079-0 and EN 60079-7. The housings are made of cast-iron and designed to IP55 degree of protection in accordance with EN 60034-5. The terminals are therefore protected from touch, dust deposits and water jets from any direction.

The position of the terminal box and cable entries can be obtained from the tables below. In frame size 90 and above, the terminal boxes can be rotated by 90° which allows the incoming supply cable to be fed in from different sides. In frame sizes 71 and 80, the terminal box can only be rotated subsequently in an authorized specialist workshop (due to opening the explosion-proof enclosure).

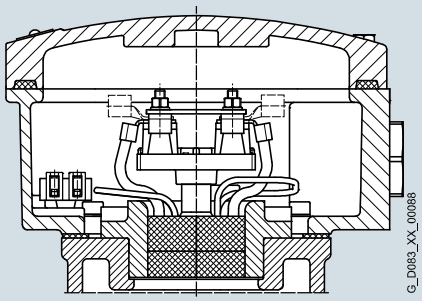
Monitoring devices or anti-condensation heaters are connected via auxiliary terminals in the terminal box. In frame size 132 and above, the auxiliary terminals can be installed in an auxiliary terminal box in type of protection Ex e II mounted on the side of the terminal box. The design of the terminal boxes can be seen in the schematic diagrams. The number and size of the main and auxiliary terminals as well as their characteristic data can be obtained from the tables below. Terminal boxes in type of protection "Explosion-proof enclosure" Ex d IIC according to EN 60079-0 and EN 60079-1 can be supplied on request. Separate terminal boxes for main connections and accessories are available in type of protection "Explosion-proof enclosure" for auxiliary terminals for frame sizes 200 to 500 only.

Figure 1 Terminal box for LOHER CHEMSTAR frame sizes 71 to 112



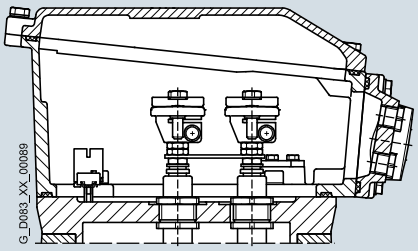
Auxiliary terminal box is not possible.

Figure 2 Terminal box for LOHER CHEMSTAR frame sizes 132 to 225



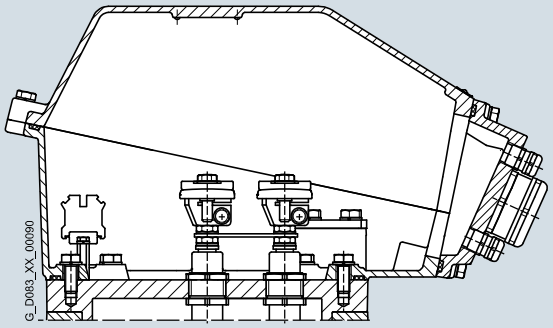
Frame sizes 132 to 160, 1 auxiliary terminal box Ex e (**W72, M52**) is possible, frame sizes 180 to 225, 2 auxiliary terminal boxes Ex e (**W72, M52**) are possible.

Figure 3 Terminal box for LOHER CHEMSTAR frame sizes 250 to 280



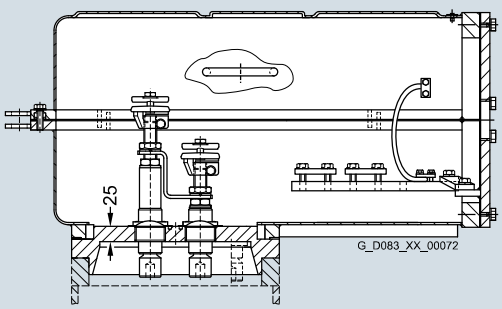
3 auxiliary terminal boxes Ex e (**W72, M52**) are possible.

Figure 4 Terminal box for LOHER CHEMSTAR frame sizes 315 to 355



3 auxiliary terminal boxes Ex e (**W72, M52**) are possible.

Figure 5 Terminal box for LOHER VARIO frame sizes 355 to 500



With the VARIO connection system, the auxiliary terminal boxes (max. 3) are mounted on the housing.

For versions with terminal box Ex d, no auxiliary terminal boxes are possible for frame sizes 71 to 112 and 1 auxiliary terminal box Ex d (**V43**) is possible for frame sizes 132 to 355.

Technical specifications (continued)

Terminal boxes for 1PS4 and 1PS5 motors

Degree of protection: IP55
Type of protection: Ex e II, alternatively Ex d IIC acc. to EN 60079-0/EN 60079-1/EN 60079-7
Housing material: Cast-iron

Frame size	Standard terminal box							Enlarged terminal box – Option **L00**			
	Terminal studs	Conductor cross-section min.	Conductor cross-section max.	Auxiliary terminals in main terminal box Number × max. cross-section [1]	PE/ground connection max.		Fig. No. on Page 2/30	Terminal studs	Conductor cross-section min.	Conductor cross-section max.	Fig. No. on Page 2/30
		mm²	mm²	mm²	mm²				mm²	mm²	
LOHER CHEMSTAR											
71	6 × M4	1	2.5 (6) [2]	4 × 2.5	4	6 [2]	**Fig. 1**	6 × M5	1	10 (25) [2]	**Fig. 2**
80											
90											
100											
112											
132	6 × M5	1	10 (25) [2]		25		**Fig. 2**	6 × M6	2.5	35 (50) [2]	**Fig. 2**
160											
180	6 × M6	2.5	35 (50) [2]	12 × 4	70		**Fig. 2**	6 × M10	6	70	**Fig. 3**
200											
225											
250	6 × M10	6 … 70			95		**Fig. 3**	6 × M12	16	150	**Fig. 4**
280											
315 S/M	6 × M12	16 … 150		16 × 4	150		**Fig. 4**	6 × M16	16	300	**Fig. 4**
315 L	6 × M16/M20 [3]	16 … 300						Special connection system on request			
LOHER VARIO											
355 … 500							**Fig. 5**				

Number and size of entry threads and cable glands (to be ordered specially), see table "Cable glands for 1PS4 and 1PS5 motors".

Cable glands for 1PS4 and 1PS5 motors

Frame size	Standard cable glands			Removable gland plate (for Ex e terminal box only)	Max. entry threads [6]			
	Entry thread [4]	Cable diameter [5] Type HSK-M-Ex for Ex e	Type ADE 1F for Ex d		Ex e terminal box Metric	Ex e terminal box NPT	Ex d terminal box Metric	Ex d terminal box NPT
		mm	mm					
LOHER CHEMSTAR								
71	1 × M25 × 1.5	10 … 16	8.5 … 16	None	1 × M32 × 1.5	2 × 1"	2 × M40 × 1.5	2 × $1^1/_4$"
80								
90								
100	1 × M32 × 1.5	13 … 20	18 … 27.5					
112	2 × M32 × 1.5							
132					2 × M50 × 1.5	2 × 2"	2 × M63 × 1.5	2 × 2"
160	2 × M40 × 1.5	22 … 32	23 … 34					
180				None	2 × M63 × 1.5			
200	2 × M50 × 1.5	32 … 38	29 … 41					
225								
250	2 × M63 × 1.5	37 … 44	42 … 56	With				
280								
315					2 × M100 × 2	2 × 4"	2 × M100 × 2	2 × 4"

Additional entry threads, e.g. for PTC thermistor, heating:
- Ex e II: M20 × 1.5/D = 6 up to 12 mm
- Ex d IIC: M20 × 1.5/D = 6 up to 12 mm

Entry threads are sealed on delivery with certified plugs, cable glands can be ordered separately.

1) Rated voltage / max. working voltage 400 V / 440 V.
2) Maximum conductor cross-section with cable lug.
3) Alternatively, larger studs for higher rated current.
4) Number and size of entry threads according to DIN 42925.
5) Cable glands suitable for unshielded/non-reinforced cables and leads. Option **K54** (Ex e), **W91** (Ex d).
6) Other threads, number and size on request.

2

Technical specifications (continued)

Auxiliary terminal box

Degree of protection: IP55
Type of protection: Ex e II, alternatively Ex d IIC acc. to EN 60079-0/EN 60079-1/EN 60079-7
Housing material: Cast-iron

Frame size	Standard terminal box				Max. configuration of auxiliary terminal boxes [2]			
	Main terminal box		Auxiliary terminal box		Max. auxiliary connections	Fig. No. on Page 2/30	Auxiliary terminal box	
	Max. auxiliary connections	Fig. No. on Page 2/30	Design	Max. connections [1] (number × max. cross-section) mm			Design	Max. connections [1] (number × max. cross-section) mm
LOHER CHEMSTAR								
71	2	**Fig. 1**	–	–	6	**Fig. 2**	Cast	6 × 2.5
80								
90								
100								
112								
132	6	**Fig. 2**	Cast	6 × 2.5	12	**Fig. 2**	Screwed on	12 × 4
160								
180	12	**Fig. 2**	Screwed on	12 × 4	20	**Fig. 3**	Screwed on	36 × 4
200								
225								
250	20	**Fig. 3**	Screwed on	36 × 4	36	**Fig. 4**	Screwed on	42 × 4
280								
315 L	36	**Fig. 4**	Screwed on	42 × 4	Special solution on request			

Explosion-proof terminal boxes with a cast auxiliary terminal box only (max. 12 × 4 mm^2), for number and size of entry threads, see table "Cable glands for 1PS5 motors".

[1] Rated voltage / max. working voltage 400 V / 440 V.

[2] Only in conjunction with enlarged terminal box.

Technical specifications (continued)

Electrical design

The outputs and electrical values listed in the selection tables can be changed by modifying the configuration. For example, if a copper cage rotor is used in place of a die-cast aluminum rotor, an even higher degree of efficiency can be achieved.

The insulation system of this motor series is suitable for line voltages up to 1000 V. The connection system (terminal box, terminals) is designed for rated voltages up to 1000 V.

The explosion-proof motors are equipped with 6 terminals. They can be operated in star or delta. The standard connection for all 400 V motors is delta connection. They are therefore suitable for 400 VΔ/690 VY. The 500 V motors are available both for 500 VY and for 500 VΔ, provided that one of the two variants is not preferred for winding reasons.

Motors of the 1PS5 series are wound in accordance with temperature class F (155 °C). Normally, they are only utilized according to class B (130 °C). In accordance with EN 60034-1, in addition to the temperature class, the thermal utilization is also stamped on the rating plate if this value lies below that of the temperature class. The fixed-voltage motors of this series are therefore stamped with "F – B". Temperature class F is only used by a few exceptions. They are indicated in the selection and ordering data and are stamped with "F".

The standard also requires that even with an unfavorable constellation, the temperature on the outer surface of the explosion-proof enclosure must not exceed the maximum permissible temperature for the respective temperature class. The motors in this list are certified for T4. The maximum permissible surface temperature is therefore 135 °C.

Operation on a frequency converter

General use of "Overcoat" double-layer enameled wire, optimized impregnation techniques and partial use of pre-formed coils with VARIO motors ensures that most motors can be converter-fed without modification of the electrical design.
The maximum limits and parameters for converter-fed operation are summarized in this catalog.

For operation on a frequency converter, the motor must be fitted with PTC thermistors. These are installed in the stator winding and, in combination with a trip unit certified by the German Federal Testing Laboratory, they perform sole motor protection in the case of converter-fed operation. Motor circuit breakers can be dispensed with. PTC thermistors with a rated shutdown temperature of 145 °C ("KL145") are normally used. Converter-fed motors of this type are normally stamped with duty type S1 or S9.

Mains-fed operation

Selection of the PTC thermistor for full motor protection (sole protection) in mains-fed operation is more complex because the load case "blocked shaft, motor draws full starting current" also has to be monitored.
To protect the rotor, it may be necessary here to use only PTC thermistors with low tripping temperatures. The advantage is that all line duty types (S1 to S7) and converter-fed operation (S9) are covered. These motors are therefore stamped with S1 to S7 and S9. The larger the motor and the smaller the number of poles, the more difficult it is to achieve sole protection using PTC thermistors in mains-fed operation: due to the laws of increasing size, larger machines become ever more "rotor-critical". The sole protection limit for 4-pole motors typically lies in the region of frame size 280.

Voltage tolerances

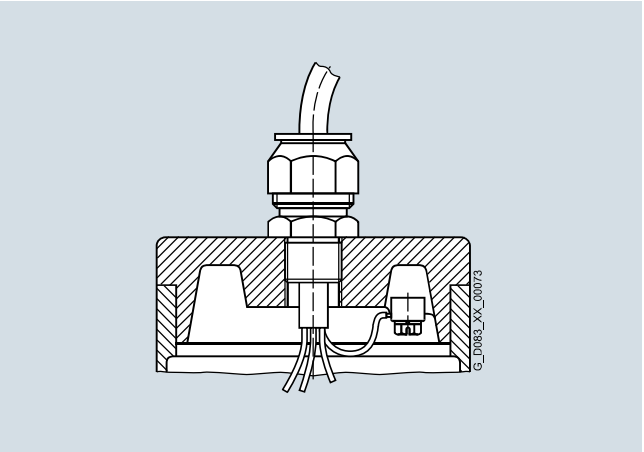
The motors are tested at -10 % of rated voltage and 100 % of rated torque, as well as at +10 % of rated voltage and 100 % of rated torque which is determined at rated output and mean voltage. It is assumed that the voltage can vary within the range of specified tolerance, but during operation the mean voltage is mainly applied to the motor (e.g. 400 V). The rated current is therefore stamped as the current that flows at rated output and mean voltage. It is sufficient to verify during testing that all temperature limits are complied with at rated torque throughout the voltage range. The motor is permitted to be operated continuously within this range.

Three-phase motors with external cables

Three-phase motors with externally routed connecting cables are used in machines or ventilation systems in which the electrical connections are routed via a separately mounted terminal box due to the space constraints.

Design

The motors correspond to the surface-cooled versions in this catalog. A gland plate is mounted in place of the terminal box (Options **G48**/**G49**).



Explosion protection: II 2G Ex d IIC T4 Gb

Frame sizes and types of construction: see dimensional drawings

Permissible coolant temperature: -20 to +50 °C

Connection cable (standard design): NSSHöu-J
The free length of connection cable must be specified when ordering. The standard length is 1.5 m. Two or more cable entries are used in the case of pole-changing or single-speed motors with rated current > 70 A.

Rated voltage: 1000 V

Max. operating temperature at conductor: -20 to +80 °C

2

Technical specifications (continued)

Motors with built-on backstop

If reverse motion of the drive has to be prevented following switch-off, three-phase motors with mechanical backstop can be used. Backstops are maintenance-free and have individual spring-loaded clamping elements. The backstops of the type CSK are supplied with permanent lubrication. The clamping elements have a tendency to lift. In backstops of the FXM type series, the clamping elements lift automatically after approach due to the centrifugal force. Wear therefore does not occur at rated speed of the motor.

The backstop is not permitted to be used as protection against rotation in the wrong direction caused by switching despite the interlock. The direction of rotation must be specified on ordering.

The motor outputs are as specified in the selection tables in this catalog. The assignment of backstops to frame sizes is specified in the table below. Frame sizes 90 to 112 have the same dimensions as standard motors. Dimensional drawings are available for the larger types on request.

Backstops for motors of frame sizes 132 to 355

Motor		Backstop	
Frame size	No. of poles	Type	M_t Nm
132	2, 4, 6	FXM 51-25 DX	On request
160	2, 4, 6	FXM 66-25 DX	400
180	2, 4, 6	FXM 66-25 DX	400
200	2, 4, 6, 8	FXM 86-25 DX	430
225	2, 4, 6, 8	FXM 86-25 DX	430
250	2, 4, 6, 8	FXM 100-50 DX	860
280	2, 4, 6, 8	FXM 120-50 SX	860
315	2, 4, 6, 8	FXM 120-50 SX	On request
355	2	FXM 120-50 SX	On request
355	4, 6	FXM 140-50 SX	On request

With the backstops listed in the table above, motors of frame sizes 90 to 355 can be supplied in IP55 or IP56 degree of protection. Higher degrees of protection on request.

Axially-mounted forced ventilation

Forced ventilation with axially-mounted fans is mainly used with converter-fed operation. It serves to increase the motor utilization while lowering the sound level in accordance with the synchronous speed. Motors with forced ventilation are designed for rated voltage ranges in accordance with the following table. The data is shown on the rating plate on the external fan or on the motor with forced ventilation.

Degree of protection: IP55, available as a special version up to IP66.

Special versions for higher ambient temperatures, increased vibration loading on request.
Retrofitting of forced ventilation is only possible following the prior consent of Siemens Ruhstorf.

Rated voltage ranges for forced ventilation on motors of the 1PS4 and 1PS5 series

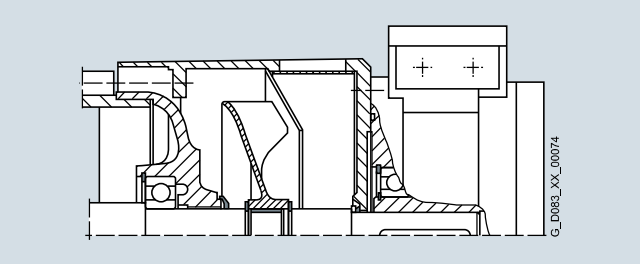
Motor	*Motor type*	Mains/ connection	Rated voltage range	Frequency	Rated output	Rated current max.
Frame size			V	Hz	kW	A
LOHER CHEMSTAR						
132 … 225	*DN.W-071BG-04*	Y	400	50	0.25	0.70
	DN.W-071BH-04		440	60	0.44	1.05
250	*DN.W-071BG-04*	Y	400	50	0.25	0.70
	DN.W-080BH-04		440	60	0.90	1.90
280 … 315	*DN.W-080BG-04*	Y	400	50	0.75	1.70
	DN.W-080BH-04		440	60	0.90	1.90
355	*DN.W-090LX-04*	D	400	50	1.1	2.60
	60 Hz on request					
LOHER VARIO						
355 … 500	*DN.W100LD04*	D	400	50	3	6.60
	60 Hz on request					

Technical specifications (continued)

Built-on single-disk spring-operated brake

Design

The explosion-proof single-disk spring-operated brake is attached to the reinforced fan cover and the extended motor shaft. Otherwise, in terms of their mechanical design, the motors are identical to the surface-cooled motors in this catalog.



Voltage and frequency: Motors with a built-on brake are supplied for the voltages and frequencies specified in the output tables.

Output: The outputs specified in the selection tables are applicable to S4 duty type in accordance with EN 60034-1.

Thermal motor protection: The motors have 3 embedded PTC thermistors and are designed for sole protection in combination with a trip unit.

Possible brake size: See table of outputs

Connection: The brake is connected in the terminal box mounted on the brake.

Brake: Type 76...-..B

Degree of protection acc. to EN 60034-5: IP67

Permissible ambient temperatures: -20 to +40 °C

Type of protection acc. to EN 60079-0, EN 60079-1 and EN 60079-7: II 2G Ex de IIC T5 Gb
Terminal box: II 2G Ex e II Gb
In special version with dust protection II 2D T100_C, DMT02 ATEX E 122 approval

AC connection:
Preferred voltage 230 V 1 AC, frequency 40 to 60 Hz or

DC connection:
Preferred voltages 24 V DC, 205 V DC

The single-disk spring-operated brake is an electromagnetic unit for dry-running operation. An electromagnetic field is used to release the brake which is applied using spring force.

The spring-operated brake brakes at zero current and releases when an AC or DC voltage is applied. The brake can be operated on the AC or DC side when alternating current is flowing.

The brake is equipped with a microswitch and 2 thermostatic switches. These switching elements are dimensioned for 250 V AC, 2.5 A inductive. In the control line of the motor contactor, the microswitch prevents the motor starting in opposition to the unreleased brake. The microswitch is not permitted to be used in lifting gear and elevators. The thermostatic switches (NC) connected in series with the microswitch (NO) interrupt the control circuit as soon as an impermissible temperature rise occurs in the brake. The motor is only permitted to be controlled via the microswitch of the spring-operated brake to ensure that it can never start in opposition to the unreleased brake. The brake can be equipped with a manual release on request, which allows the brake to be released manually.

If the motor is only ordered and used for S1 duty type and the built-on brake is only required as a holding brake, the motor can be protected with a motor circuit breaker in accordance with DIN VDE 0165.

Mechanical design with brake

Dust and explosion protection II for DC or single-phase AC

General technical specifications

		Brake designs	
		76 24E..B00 – DC (direct current)	76 24G..B00 – AC (alternating current)
Standard rated voltage	V	205 V DC	230 V AC
Degree of protection	–	IP67	
Temperature class	–	T5 (according to EN 60079)	
Rated torque	Nm	10 … 270	

Technical specifications

		Brake size					
		10	**11**	**13**	**16**	**19**	**24**
Braking torque T_2	Nm	10	20	50	100	150	270
Max. speed n_{max}	rpm	6000	6000	3000	3000	3000	3000
Maximum switching power P_{max}	kJ/h	270	270	400	400	570	570
Maximum operating energy ($Z = 1$) W_{max}	kJ	41	41	55	55	80	80
Rated power P_{rated}	W	56	56	82	82	91	91
Apparent power P_S	VA	62	62	88	88	95	95
Application time t_1	ms	80	70	110	90	180	140
Release time t_2	ms	80	110	170	230	240	350
Moment of inertia of brake (driver and friction disk)	$kg\ m^2$	0.0025	0.0025	0.0215	0.0215	0.125	0.125
Weight m	kg	14.5	14.5	29	29	57	57

2

Selection and ordering data

P_{rated}, 50 Hz	Frame size	Operating values at rated output: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cosφ rated, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	I_{rated}, 50 Hz, 500 V	I_{rated}, 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	A	A	–	–	–			kg	kgm^2
• Cooling: self-ventilated (IC 411)																		
• Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30																		
• Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 %																		
• Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																		
2-pole: 3000 rpm at 50 Hz																		
LOHER CHEMSTAR																		
0.37	**071 B**	2780	1.27	1)	77.5	78.5	78.3	0.87	0.79	0.63	0.46	2.5	5.0	2.5	*DNGW-071BR-02* 2)	**1PS 5070-■BD■■-4AA3**	24	0.0006
0.55	**071 B**	2780	1.89	1)	77.5	78.5	78.3	0.86	1.19	0.95	0.69	2.5	5.0	2.5	*DNGW-071BS-02* 2)	**1PS 5071-■BD■■-4AA3**	25	0.0006
0.75	**080 B**	2810	2.55	IE2	81.6	83.0	82.0	0.87	1.52	1.22	0.88	2.7	5.8	2.9	*DNGW-080BR-02* 2)	**1PS 5080-■BD■■-4AA3**	26	0.0008
1.1	**080 B**	2810	3.74	IE2	81.5	82.8	82.7	0.86	2.30	1.84	1.33	2.8	5.5	2.9	*DNGW-080BS-02* 2)	**1PS 5081-■BD■■-4AA3**	28	0.0008
1.5	**090 L**	2865	5.00	IE2	84.0	85.1	84.3	0.88	2.90	2.32	1.68	3.0	6.8	2.8	*DNGW-090LR-02*	**1PS 5095-■BD■■-4AA3**	36	0.0020
2.2	**090 L**	2850	7.4	IE2	84.6	85.6	85.1	0.86	4.4	3.52	2.55	3.0	6.5	3.0	*DNGW-090LS-02*	**1PS 5098-■BD■■-4AA3**	36	0.002
3	**100 L**	2900	9.9	IE2	86.0	86.3	85.8	0.87	5.8	4.6	3.36	2.7	7.5	3.0	*DNGW-100LS-02*	**1PS 5106-■BD■■-4AA3**	51	0.0041
4	**112 M**	2890	13.2	IE2	86.5	86.8	86.8	0.93	7.2	5.8	4.2	2.7	7.0	3.1	*DNGW-112MS-02*	**1PS 5113-■BD■■-4AA3**	66	0.0075
5.5	**132 S**	2910	18.0	IE2	88.5	89.9	89.2	0.90	10.0	8.0	5.8	2.6	6.7	3.1	*DNGW-132SR-02*	**1PS 5131-■BD■■-4AA3**	83	0.014
7.5	**132 S**	2915	24.6	IE2	89.5	90.1	89.5	0.91	13.3	10.6	7.7	2.7	6.8	3.0	*DNGW-132SS-02*	**1PS 5132-■BD■■-4AA3**	95	0.020
11	**160 M**	2955	36	IE2	90.7	91.0	90.0	0.90	19.5	15.6	11.3	2.1	7.5	2.8	*DNGW-160MR-02*	**1PS 5163-■BD■■-4AA3**	176	0.045
15	**160 M**	2955	48	IE2	91.3	92.1	91.9	0.89	26.5	21.5	15.4	2.1	7.0	2.8	*DNGW-160MS-02*	**1PS 5165-■BD■■-4AA3**	176	0.092
18.5	**160 L**	2955	60	IE2	91.4	92.2	91.9	0.89	33.0	26.5	19.0	2.1	70	2.8	*DNGW-160LS-02*	**1PS 5166-■BD■■-4AA3**	192	0.092
22	**180 M**	2960	71	IE2	92.5	93.0	92.8	0.90	38.0	30.5	22.0	2.2	6.8	2.9	*DNGW-180MS-02*	**1PS 5183-■BD■■-4AA3**	246	0.16
30	**200 L**	2955	97	IE2	92.0	92.3	91.7	0.87	54.0	43.5	31.5	2.5	6.9	3.3	*DNGW-200LR-02*	**1PS 5206-■BD■■-4AA3**	333	0.20
37	**200 L**	2960	119	IE2	92.5	92.8	92.3	0.88	66.0	52.0	38.0	2.7	7.4	3.5	*DNGW-200LS-02*	**1PS 5208-■BD■■-4AA3**	349	0.23
45	**225 M**	2965	145	IE2	92.9	93.1	92.5	0.88	79.0	64.0	46.0	2.3	7.8	2.6	*DNGW-225MS-02*	**1PS 5223-■BD■■-4AA3**	420	0.34
55	**250 M**	2975	177	IE2	93.8	93.9	93.2	0.86	98.0	79.0	57.0	2.1	8.0	2.9	*DNGW-250MM-02*	**1PS 5253-■BD■■-4AA3**	540	0.45
75	**280 S**	2980	240	IE2	94.4	93.9	92.4	0.89	129	103	75.0	2.1	7.3	3.0	*DNGW-280SL-02*	**1PS 5280-■BD■■-4AA3**	775	0.88
90	**280 M**	2980	288	IE2	94.4	94.1	92.6	0.90	153	122	89.0	2.0	6.3	2.5	*DNGW-280MM-02*	**1PS 5283-■BD■■-4AA3**	830	1.03
110	**315 S**	2980	352	IE2	94.8	94.3	92.9	0.88	190	152	110	2.2	6.7	2.5	*DNGW-315SL-02*	**1PS 5311-■BD■■-4AA3**	1030	1.55
132	**315 M**	2980	423	IE2	95.1	95.0	94.2	0.89	225	180	130	2.0	6.3	2.4	*DNGW-315ML-02*	**1PS 5313-■BD■■-4AA3**	1080	1.85
160	**315 M**	2980	513	IE2	95.6	95.6	95.0	0.89	270	215	157	2.3	6.8	2.6	*DNGW-315MN-02*	**1PS 5315-■BD■■-4AA3**	1160	2.2
200	**315 L**	2980	641	IE2	95.8	95.8	95.2	0.89	340	270	196	2.6	7.3	2.7	*DNGW-315LL-02*	**1PS 5316-■BD■■-4AA3**	1390	2.8
250	**315 L**	2985	800	IE2	95.8	96.1	95.8	0.90	420	335	245	2.6	7.3	2.7	*DNGW-315LN-02*	**1PS 5318-■BD■■-4AA3**	1570	3.5
315	**355 M**	2984	1008	IE2	95.6	95.4	94.5	0.88	540	432	313	1.6	6.8	2.3	*DNGW-355MR-02* 3)	**1PS 5353-■BD■■-4AA3**	2520	4.8
360	**355 M**	2984	1152	IE2	95.9	95.6	95.0	0.89	610	488	354	1.7	6.8	2.4	*DNGW-355MS-02* 3)	**1PS 5355-■BD■■-4AA3**	2660	5.3
460	**355 M**	2985	1472	1)	96.3	96.3	95.7	0.90	770	616	446	1.9	6.8	2.6	*DNGW-355MT-02* 3)	**1PS 5357-■BD■■-4AA3**	2800	6.4
LOHER VARIO																		
400	**355 L**	2985	1279	1)	96.7	96.7	96.1	0.91	655	525	380	1.4	7.9	3.2	*DNS* ■ *-355LD-02*	**1PS ■358-■BH■■-4AA0**	2250	4.0
450	**355 L**	2978	1443	1)	96.4	96.5	96.0	0.91	740	590	430	0.95	6.2	2.55	*DNS* ■ *-355LX-02*	**1PS ■358-■BJ■■-4AA0**	2600	5.0
450	**400 L**	2984	1440	1)	96.5	96.5	95.9	0.90	745	595	430	0.80	6.2	2.8	*DNS* ■ *-400LL-02*	**1PS ■404-■BJ■■-4AA0**	3000	6.0
500	**400 L**	2982	1601	1)	96.6	96.7	96.2	0.91	820	655	475	0.80	5.9	2.55	*DNS* ■ *-400LN-02*	**1PS ■405-■BJ■■-4AA0**	3200	7.0
560	**400 L**	2983	1792	1)	96.8	96.8	96.3	0.91	915	730	530	0.85	6.2	2.7	*DNS* ■ *-400LN-02*	**1PS ■407-■BJ■■-4AA0**	3200	7.0
630	**400 L**	2984	2016	1)	96.8	96.8	96.3	0.91	–	825	595	0.85	6.2	2.6	*DNS* ■ *-400LX-02*	**1PS ■408-■BJ■■-4AA0**	3500	8.5
630	**450 L**	2986	2014	1)	96.7	96.6	96.0	0.91	–	830	600	0.75	6.2	2.7	*DNS* ■ *-450LL-02*	**1PS ■453-■BJ■■-4AA0**	4200	11
710	**450 L**	2986	2270	1)	96.8	96.8	96.2	0.91	–	925	670	0.80	6.3	2.8	*DNS* ■ *-450LL-02*	**1PS ■455-■BJ■■-4AA0**	4200	11
800	**450 L**	2986	2557	1)	96.9	96.9	96.3	0.91	–	1050	760	0.80	6.3	2.8	*DNS* ■ *-450LN-02*	**1PS ■457-■BJ■■-4AA0**	4500	13
900	**450 L**	2985	2879	1)	97.0	97.0	96.5	0.91	–	1170	850	0.85	6.4	2.7	*DNS* ■ *-450LN-02*	**1PS ■458-■BJ■■-4AA0**	4500	13
1000	**500 L**	2986	3198	1)	96.6	96.5	95.6	0.90	–	–	960	0.85	6.4	2.8	*DNS* ■ *-500LL-02*	**1PS ■505-■BJ■■-4AA0**	6400	24
1200	**500 L**	2990	3831	1)	96.9	96.8	96.1	0.91	–	–	1135	0.75	6.6	2.8	*DNS* ■ *-500LN-02*	**1PS ■508-■BJ■■-4AA0**	6400	35

Enclosures	Frame size							Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**		**4**				–
Ex de IIC/Ex d IIC	71 ... 500	**W**		**5**				–
Operating modes	Frame size							Order code
Mains-fed operation	71 ... 450 (≤ 800 kW)				**0**			–
Converter-fed operation, standard insulation	71 ... 400				**1**			–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 500				**2**			–
Mains-fed operation, pre-formed coil	450 (> 800 kW) ... 500				**3**			–
Converter-fed operation, pre-formed coil	450 ... 500				**4**			–
Voltages	Frame size							Order code
690 VΔ, 50 Hz	355 ... 500					**0**		–
230 V/400 V, 50 Hz	71 ... 112					**1**		–
500 VY, 50 Hz	71 ... 315					**3**		–
500 VΔ, 50 Hz	355 ... 450					**5**		–
400 V/690 V, 50 Hz	71 ... 400					**6**		–
690 VY, 50 Hz	71 ... 400					**8**		–
For other voltages see Page 2/54	71 ... 500					**9**		...
Types of construction	Frame size							Order code
IM B3	71 ... 500						**0**	–
IM B5	71 ... 315						**1**	–
IM B34	71 ... 112						**2**	–
IM B14	71 ... 112						**3**	–
IM V1/cover	71 ... 400						**4**	–
IM B35	71 ... 500						**6**	–
For other types of construction see from Page 1/28	71 ... 500						**9**	...

1) Outside the IE code classification according to IEC 60034-30.

2) Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

3) Direction of rotation must be specified (order code **K97** or **K98**).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Operating values at rated output: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cosφ rated, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	I_{rated}, 50 Hz, 500 V	I_{rated}, 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	A	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411)																		
• Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30																		
• Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 %																		
• Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																		
4-pole: 1500 rpm at 50 Hz																		
LOHER CHEMSTAR																		
0.25	**071 B**	1385	1.72	[1]	71.0	72.3	72.0	0.76	0.67	0.54	0.39	2.0	4.0	2.1	*DNGW-071BR-04* [2]	**1PS 5070-■BD■■-4BA3**	24	0.0015
0.37	**071 B**	1400	2.52	[1]	74.7	75.6	73.2	0.76	0.94	0.75	0.54	2.2	4.2	2.0	*DNGW-071BS-04* [2]	**1PS 5071-■BD■■-4BA3**	24	0.0020
0.55	**080 B**	1400	3.75	[1]	77.5	79.0	78.0	0.75	1.37	1.10	0.79	2.2	4.2	2.2	*DNGW-080BR-04* [2]	**1PS 5080-■BD■■-4BA3**	27	0.0030
0.75	**080 B**	1460	4.91	IE2	84.9	84.9	82.9	0.77	1.68	1.34	0.97	2.0	6.3	2.5	*DNGW-080BS-04* [2]	**1PS 5081-■BD■■-4BA3**	28	0.0030
1.1	**090 L**	1460	7.2	IE2	86.4	87.2	86.3	0.85	2.15	1.72	1.25	1.9	6.8	2.8	*DNGW-090LR-04*	**1PS 5095-■BD■■-4BA3**	34	0.0044
1.5	**090 L**	1455	9.8	IE2	86.1	86.5	85.2	0.81	3.10	2.48	1.80	1.9	6.7	2.8	*DNGW-090LS-04*	**1PS 5098-■BD■■-4BA3**	37	0.0044
2.2	**100 L**	1455	14.4	IE2	87.1	87.8	86.8	0.83	4.4	3.52	2.55	1.7	6.4	2.4	*DNGW-100LR-04*	**1PS 5106-■BD■■-4BA3**	53	0.0060
3	**100 L**	1455	19.7	IE2	86.0	86.3	84.7	0.80	6.3	5.0	3.65	2.0	6.3	2.6	*DNGW-100LS-04*	**1PS 5108-■BD■■-4BA3**	55	0.0071
4	**112 M**	1460	26.2	IE2	88.8	89.4	88.8	0.84	7.8	6.2	4.5	1.9	6.8	2.5	*DNGW-112MS-04*	**1PS 5113-■BD■■-4BA3**	66	0.0126
5.5	**132 S**	1455	36.1	IE2	89.0	89.7	89.2	0.85	10.5	8.4	6.1	2.6	7.6	2.7	*DNGW-132SR-04*	**1PS 5131-■BD■■-4BA3**	93	0.030
7.5	**132 M**	1470	48.7	IE2	90.2	90.7	90.1	0.84	14.3	11.4	8.3	2.0	7.6	2.8	*DNGW-132MS-04*	**1PS 5133-■BD■■-4BA3**	102	0.030
11	**160 M**	1460	71	IE2	90.5	91.4	91.6	0.81	21.7	16.7	12.1	2.1	6.8	2.6	*DNGW-160MR-04*	**1PS 5163-■BD■■-4BA3**	176	0.077
15	**160 L**	1460	98	IE2	91.4	92.0	92.2	0.81	29.4	22.5	16.3	2.1	6.5	2.7	*DNGW-160LS-04*	**1PS 5166-■BD■■-4BA3**	192	0.098
18.5	**180 M**	1470		IE2	92.3	92.8	92.4	0.83	34.9	27.5	20.0	3.3	7.6	3.0	*DNGW-180MR-04*	**1PS 5183-■BD■■-4BA3**	246	0.16
22	**180 L**	1470	143	IE2	93.0	92.3	92.0	0.83	41.7	32.5	23.5	3.0	7.0	2.6	*DNGW-180LS-04*	**1PS 5186-■BD■■-4BA3**	255	0.16
30	**200 L**	1470	195	IE2	92.3	93.2	93.4	0.83	56.5	45.0	33.0	1.5	6.0	2.5	*DNGW-200LS-04*	**1PS 5206-■BD■■-4BA3**	333	0.27
37	**225 S**	1480	240	IE2	93.5	93.9	93.4	0.81	71.0	52.0	38.0	3.0	7.3	2.9	*DNGW-225SR-04*	**1PS 5220-■BD■■-4BA3**	415	0.37
45	**225 M**	1480	291	IE2	93.5	93.9	93.4	0.81	71.0	65.0	47.5	3.0	7.3	2.9	*DNGW-225MS-04*	**1PS 5223-■BD■■-4BA3**	445	0.37
55	**250 M**	1480	355	IE2	93.7	93.9	93.5	0.85	97.0	78.0	56.0	2.7	6.8	3.0	*DNGW-250MM-04*	**1PS 5253-■BD■■-4BA3**	560	0.75
75	**280 S**	1480	484	IE2	94.4	94.2	93.8	0.87	137	109	79.0	2.5	6.8	3.0	*DNGW-280SL-04*	**1PS 5280-■BD■■-4BA3**	820	1.3
90	**280 M**	1480	581	IE2	94.5	94.3	93.6	0.87	162	129	94.0	2.6	7.3	3.1	*DNGW-280MM-04*	**1PS 5283-■BD■■-4BA3**	870	1.4
110	**315 S**	1485	707	IE2	94.6	94.6	94.0	0.86	200	164	119	2.7	7.4	3.0	*DNGW-315SL-04*	**1PS 5311-■BD■■-4BA3**	1020	2.0
132	**315 M**	1485	848	IE2	95.0	94.9	94.6	0.87	240	191	138	2.7	7.1	2.9	*DNGW-315ML-04*	**1PS 5313-■BD■■-4BA3**	1110	2.3
160	**315 M**	1485	1028	IE2	95.3	95.8	95.7	0.85	290	230	165	2.8	7.2	3.1	*DNGW-315MN-04*	**1PS 5315-■BD■■-4BA3**	1190	2.8
200	**315 L**	1488	2184	IE2	95.5	95.8	95.8	0.85	360	285	205	3.1	7.5	3.2	*DNGW-315LL-04*	**1PS 5316-■BD■■-4BA3**	1400	3.5
250	**315 L**	1487	1602	IE2	95.6	95.9	95.8	0.85	460	355	260	3.1	7.7	3.2	*DNGW-315LM-04*	**1PS 5317-■BD■■-4BA3**	1520	4.2
315	**355 M**	1488	2022	IE2	95.5	95.6	95.0	0.85	560	448	325	2.0	6.8	2.2	*DNGW-355MR-04* [3]	**1PS 5353-■BD■■-4BA3**	2480	6.1
360	**355 M**	1488	2310	IE2	95.7	95.8	95.2	0.85	640	512	371	2.2	6.9	2.2	*DNGW-355MS-04* [3]	**1PS 5355-■BD■■-4BA3**	2610	6.8
460	**355 M**	1488	2952	[1]	96.0	96.1	95.8	0.86	800	640	464	2.2	7.1	2.2	*DNGW-355MT-04* [3]	**1PS 5357-■BD■■-4BA3**	2750	8.5
LOHER VARIO																		
400	**355 L**	1491	2561	[1]	96.7	96.7	96.1	0.86	690	552	400	1.25	6.7	2.4	*DNS■-355LD-04*	**1PS ■350-■BH■■-4BA0**	2500	8.5
450	**355 L**	1491	2880	[1]	96.6	96.7	96.1	0.86	785	630	457	1.1	6.2	2.4	*DNS■-355LN-04*	**1PS ■357-■BJ■■-4BA0**	2900	9.0
500	**355 L**	1492	3200	[1]	96.7	96.7	96.2	0.85	875	700	505	1.0	6.2	2.4	*DNS■-355LX-04*	**1PS ■358-■BJ■■-4BA0**	3000	9.5
500	**400 L**	1492	3200	[1]	96.6	96.6	96.0	0.87	855	685	495	1.1	6.2	2.6	*DNS■-400LL-04*	**1PS ■404-■BJ■■-4BA0**	3500	13.0
560	**400 L**	1492	3583	[1]	96.7	96.7	96.1	0.88	950	760	550	1.1	6.2	2.5	*DNS■-400LN-04*	**1PS ■405-■BJ■■-4BA0**	3700	15.0
630	**400 L**	1492	4031	[1]	96.8	96.8	96.2	0.88	1070	855	620	1.1	6.3	2.5	*DNS■-400LN-04*	**1PS ■407-■BJ■■-4BA0**	3700	15.0
710	**400 L**	1492	4544	[1]	96.9	96.9	96.4	0.88	1200	960	695	1.05	6.3	2.5	*DNS■-400LX-04*	**1PS ■408-■BJ■■-4BA0**	3900	17.0
800	**450 L**	1493	5114	[1]	96.9	96.9	96.3	0.88	1355	1085	785	1.0	6.6	2.5	*DNS■-450LL-04*	**1PS ■455-■BJ■■-4BA0**	4500	24.5
900	**450 L**	1493	5755	[1]	97.0	97.0	96.4	0.88	–	1215	880	1.05	6.6	2.5	*DNS■-450LN-04*	**1PS ■457-■BJ■■-4BA0**	5000	29.0
950	**450 L**	1493	6076	[1]	97.0	97.0	96.5	0.88	–	1285	930	1.05	6.6	2.6	*DNS■-450LN-04*	**1PS ■458-■BJ■■-4BA0**	5000	29.0
1000	**500 L**	1494	6390	[1]	96.9	96.9	96.2	0.88	–	–	980	0.85	6.2	2.6	*DNS■-500LL-04*	**1PS ■504-■BJ■■-4BA0**	6000	43.0
1120	**500 L**	1493	7160	[1]	97.0	97.0	96.4	0.88	–	–	1095	0.80	6.0	2.6	*DNS■-500LL-04*	**1PS ■505-■BJ■■-4BA0**	6000	43.0
1250	**500 L**	1494	7990	[1]	97.0	96.9	96.3	0.88	–	–	–	0.80	6.5	2.6	*DNS■-500LN-04*	**1PS ■507-■BJ■■-4BA0**	6700	54.0
1400	**500 L**	1494	8940	[1]	97.0	97.0	96.3	0.87	–	–	1385	0.90	7.2	2.6	*DNS■-500LN-04*	**1PS ■508-■BJ■■-4BA0**	6700	54.0

Enclosures	Frame size							Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**		**4**				–
Ex de IIC/Ex d IIC	71 ... 500	**W**		**5**				–
Operating modes	Frame size							Order code
Mains-fed operation	71 ... 450 (≤ 800 kW)				**0**			–
Converter-fed operation, standard insulation	71 ... 400				**1**			–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 500				**2**			–
Mains-fed operation, pre-formed coil	450 (> 800 kW) ... 500				**3**			–
Converter-fed operation, pre-formed coil	450 ... 500				**4**			–
Voltages	Frame size							Order code
690 VΔ, 50 Hz	355 ... 500					**0**		–
230 V/400 V, 50 Hz	71 ... 112					**1**		–
500 VY, 50 Hz	71 ... 315					**3**		–
500 VΔ, 50 Hz	355 ... 450					**5**		–
400 V/690 V, 50 Hz	71 ... 400					**6**		–
690 VY, 50 Hz	71 ... 400					**8**		–
For other voltages see Page 2/54	71 ... 500					**9**		...
Types of construction	Frame size							Order code
IM B3	71 ... 500						**0**	–
IM B5	71 ... 315						**1**	–
IM B34	71 ... 112						**2**	–
IM B14	71 ... 112						**3**	–
IM V1/cover	71 ... 400						**4**	–
IM B35	71 ... 500						**6**	–
For other types of construction see from Page 1/28	71 ... 500						**9**	...

[1] Outside the IE code classification according to IEC 60034-30.

[2] Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

[3] Direction of rotation must be specified (order code K97 or K98).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Operating values at rated output: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi$ rated, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	I_{rated}, 50 Hz, 500 V	I_{rated}, 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	A	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411)																		
• Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30																		
• Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 %																		
• Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																		
6-pole: 1000 rpm at 50 Hz																		
LOHER CHEMSTAR																		
0.25	**071 B**	910	2.62	IE2 [1]	65.0	67.0	63.5	0.75	0.74	0.59	0.43	1.7	3.2	2.0	*DNGW-071BS-06* [2]	**1PS 5071-■BD■■-4CA3**	24	0.0015
0.37	**080 B**	910	3.88	IE2 [1]	69.5	70.0	68.0	0.74	1.04	0.83	0.60	1.9	3.5	2.1	*DNGW-080BR-06* [2]	**1PS 5080-■BD■■-4CA3**	27	0.0020
0.55	**080 B**	910	5.8	IE2 [1]	73.5	73.8	71.0	0.70	1.51	1.21	0.88	2.0	3.3	2.1	*DNGW-080BS-06* [2]	**1PS 5081-■BD■■-4CA3**	30	0.0030
0.75	**090 L**	960	7.5	IE2	80.0	80.4	78.0	0.72	1.88	1.50	1.09	1.5	4.5	2.2	*DNGW-090LR-06*	**1PS 5095-■BD■■-4CA3**	36	0.0044
1.1	**090 L**	950	11.1	IE2	78.1	77.9	75.4	0.72	2.80	2.24	1.62	1.4	4.1	2.0	*DNGW-090LS-06*	**1PS 5098-■BD■■-4CA3**	42	0.0044
1.5	**100 L**	955	15.0	IE2	80.0	79.0	75.0	0.68	3.95	3.16	2.29	2.5	4.5	2.7	*DNGW-100LS-06*	**1PS 5106-■BD■■-4CA3**	55	0.010
2.2	**112 M**	950	22.1	IE2	82.7	83.7	82.3	0.74	5.2	4.2	3.01	2.0	5.0	2.2	*DNGW-112MS-06*	**1PS 5113-■BD■■-4CA3**	66	0.019
3	**132 S**	950	30.2	IE2	85.4	86.1	85.1	0.79	6.4	5.1	3.71	2.5	5.7	2.5	*DNGW-132SR-06*	**1PS 5131-■BD■■-4CA3**	92	0.033
4	**132 M**	955	40.0	IE2	85.7	86.7	86.1	0.82	8.2	6.6	4.8	2.3	6.0	2.5	*DNGW-132MR-06*	**1PS 5133-■BD■■-4CA3**	96	0.045
5.5	**132 M**	955	55	IE2	86.1	86.1	85.5	0.77	12.0	9.6	7.0	2.4	6.0	2.6	*DNGW-132MS-06*	**1PS 5135-■BD■■-4CA3**	104	0.045
7.5	**160 M**	965	74	IE2	88.2	88.5	88.0	0.80	15.3	12.3	8.9	1.5	6.0	2.4	*DNGW-160MR-06*	**1PS 5163-■BD■■-4CA3**	176	0.088
11	**160 L**	970	108	IE2	88.9	89.4	88.7	0.78	23.0	18.3	13.3	1.6	6.0	2.6	*DNGW-160LS-06*	**1PS 5166-■BD■■-4CA3**	192	0.11
15	**180 L**	980	146	IE2	90.5	91.2	90.7	0.82	29.0	23.5	16.9	2.1	6.5	2.5	*DNGW-180LS-06*	**1PS 5186-■BD■■-4CA3**	255	0.28
18.5	**200 L**	980	180	IE2	91.2	91.5	90.9	0.80	36.5	29.5	21.0	2.5	7.0	2.6	*DNGW-200LR-06*	**1PS 5206-■BD■■-4CA3**	333	0.45
22	**200 L**	980	214	IE2	91.5	92.0	91.4	0.78	44.5	35.5	26.0	2.5	7.0	2.6	*DNGW-200LS-06*	**1PS 5208-■BD■■-4CA3**	349	0.49
30	**225 M**	985	291	IE2	91.7	92.5	92.0	0.81	58.0	46.5	34.0	2.0	7.0	2.8	*DNGW-225MS-06*	**1PS 5223-■BD■■-4CA3**	430	0.92
37	**250 M**	985	359	IE2	92.8	92.8	91.9	0.79	73.0	58.0	42.0	1.5	6.6	2.5	*DNGW-250MM-06*	**1PS 5253-■BD■■-4CA3**	560	1.0
45	**280 S**	985	436	IE2	93.2	93.4	93.1	0.83	84.0	67.0	48.5	2.5	7.0	2.8	*DNGW-280SL-06*	**1PS 5280-■BD■■-4CA3**	780	2.5
55	**280 M**	990	531	IE2	93.5	93.6	93.2	0.84	101	81.0	59.0	2.6	7.0	2.8	*DNGW-280MM-06*	**1PS 5283-■BD■■-4CA3**	850	2.9
75	**315 S**	990	723	IE2	94.5	94.8	94.5	0.86	133	107	77.0	2.0	7.2	2.1	*DNGW-315SL-06*	**1PS 5311-■BD■■-4CA3**	1030	3.3
90	**315 M**	990	868	IE2	94.8	95.2	95.1	0.85	161	129	93.0	2.1	6.9	2.3	*DNGW-315ML-06*	**1PS 5313-■BD■■-4CA3**	1100	4.0
110	**315 M**	990	1061	IE2	94.5	94.8	94.4	0.86	195	156	113	2.0	7.1	2.2	*DNGW-315MM-06*	**1PS 5314-■BD■■-4CA3**	1190	4.9
132	**315 M**	990	1273	IE2	94.7	95.0	94.7	0.86	235	187	136	2.2	7.0	2.2	*DNGW-315MN-06*	**1PS 5315-■BD■■-4CA3**	1180	4.9
160	**315 L**	990	1543	IE2	94.8	95.0	95.0	0.87	280	225	162	2.1	7.0	2.3	*DNGW-315LL-06*	**1PS 5316-■BD■■-4CA3**	1400	6.0
200	**315 L**	990	1929	IE2	95.0	95.2	95.0	0.84	360	290	210	2.3	7.0	2.5	*DNGW-315LM-06*	**1PS 5317-■BD■■-4CA3**	1600	6.8
280	**355M**	993	2693	IE2	95.7	95.7	95.2	0.82	520	416	301	2.1	7.1	2.8	*DNGW-355MR-06*	**1PS 5353-■BD■■-4CA3**	2460	13
315	**355M**	993	3029	IE2	95.9	95.9	95.5	0.83	570	456	330	2.1	7.1	2.8	*DNGW-355MS-06*	**1PS 5355-■BD■■-4CA3**	2590	15
360	**355M**	994	3458	IE2	96.0	96.1	95.7	0.83	650	520	377	2.2	7.2	2.9	*DNGW-355MT-06*	**1PS 5357-■BD■■-4CA3**	2730	16
LOHER VARIO																		
315	**355 L**	994	3027	IE2	96.2	96.2	95.5	0.84	560	450	325	1.35	6.6	2.5	*DNS ■-355LD-06*	**1PS ■358-■BH■■-4CA0**	2600	11.5
355	**355 L**	993	3415	IE2	96.3	96.3	95.8	0.85	630	505	360	1.0	5.6	2.3	*DNS ■-355LN-06*	**1PS ■357-■BJ■■-4CA0**	2700	12.5
400	**355 L**	992	3849	[1]	96.3	96.4	95.9	0.84	715	575	415	1.0	5.6	2.25	*DNS ■-355LN-06*	**1PS ■358-■BJ■■-4CA0**	2700	12.5
400	**400 L**	994	3844	[1]	96.3	96.4	95.8	0.84	715	575	415	1.0	5.6	2.3	*DNS ■-400LL-06*	**1PS ■404-■BJ■■-4CA0**	3400	18.0
450	**400 L**	994	4323	[1]	96.4	96.4	95.9	0.84	800	640	465	1.0	5.5	2.25	*DNS ■-400LN-06*	**1PS ■405-■BJ■■-4CA0**	3700	21.5
500	**400 L**	994	4805	[1]	96.5	96.5	96.0	0.84	890	710	515	1.05	5.7	2.3	*DNS ■-400LN-06*	**1PS ■407-■BJ■■-4CA0**	3700	21.5
560	**450 L**	995	5374	[1]	96.7	96.7	96.2	0.85	980	785	570	0.95	5.8	2.3	*DNS ■-450LL-06*	**1PS ■453-■BJ■■-4CA0**	4700	34.0
630	**450 L**	995	6046	[1]	96.8	96.8	96.3	0.85	1105	885	640	0.95	5.7	2.3	*DNS ■-450LL-06*	**1PS ■455-■BJ■■-4CA0**	4700	34.0
710	**450 L**	995	6813	[1]	96.9	97.0	96.5	0.85	1240	995	720	0.95	5.7	2.25	*DNS ■-450LN-06*	**1PS ■457-■BJ■■-4CA0**	5000	40.0
800	**450 L**	995	7676	[1]	97.0	97.0	96.5	0.85	–	1125	815	1.0	5.9	2.35	*DNS ■-450LN-06*	**1PS ■458-■BJ■■-4CA0**	5000	40.0
900	**500 L**	995	8635	[1]	96.8	96.8	96.2	0.85	–	–	915	1.0	5.8	2.25	*DNS ■-500LL-06*	**1PS ■505-■BJ■■-4CA0**	6200	60.0
1000	**500 L**	995	9592	[1]	96.9	96.8	96.2	0.85	–	–	1015	1.0	6.0	2.25	*DNS ■-500LN-06*	**1PS ■507-■BJ■■-4CA0**	6900	72.0
1120	**500 L**	995	10746	[1]	96.9	96.9	96.4	0.86	–	–	1120	1.0	5.7	2.15	*DNS ■-500LN-06*	**1PS ■508-■BJ■■-4CA0**	6900	72.0

Enclosures	Frame size								Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**			**4**				–
Ex de IIC/Ex d IIC	71 ... 500	**W**			**5**				–
Operating modes	Frame size								Order code
Mains-fed operation	71 ... 450					**0**			–
Converter-fed operation, standard insulation	71 ... 450					**1**			–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 500					**2**			–
Mains-fed operation, pre-formed coil	500					**3**			–
Converter-fed operation, pre-formed coil	450 ... 500					**4**			–
Voltages	Frame size								Order code
690 VΔ, 50 Hz	355 ... 500						**0**		–
230 V/400 V, 50 Hz	71 ... 112						**1**		–
500 VY, 50 Hz	71 ... 315						**3**		–
500 VΔ, 50 Hz	355 ... 450						**5**		–
400 V/690 V, 50 Hz	71 ... 400						**6**		–
690 VY, 50 Hz	71 ... 400						**8**		–
For other voltages see Page 2/54	71 ... 500						**9**		...
Types of construction	Frame size								Order code
IM B3	71 ... 500							**0**	–
IM B5	71 ... 315							**1**	–
IM B34	71 ... 112							**2**	–
IM B14	71 ... 112							**3**	–
IM V1/cover	71 ... 450							**4**	–
IM B35	71 ... 500							**6**	–
For other types of construction see from Page 1/28	71 ... 500							**9**	...

[1] Outside the IE code classification according to IEC 60034-30.

[2] Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

Selection and ordering data (continued)

P_{ra-ted}, 50 Hz	Frame size	Operating values at rated output: n_{ra-ted}, 50 Hz	T_{ra-ted}, 50 Hz	IE class	η_{ra-ted}, 50 Hz, 4/4	η_{ra-ted}, 50 Hz, 3/4	η_{ra-ted}, 50 Hz, 2/4	$\cos\varphi$ rated, 50 Hz, 4/4	I_{ra-ted}, 50 Hz, 400 V	I_{ra-ted}, 50 Hz, 500 V	I_{ra-ted}, 50 Hz, 690 V	T_{LR}/T_{ra-ted}	I_{LR}/I_{ra-ted}	T_B/T_{ra-ted}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	A	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411)																		
• Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 %																		
• Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																		
8-pole: 750 rpm at 50 Hz																		
LOHER CHEMSTAR																		
0.12	**071 B**	680	1.69	1)	51.0	51.5	45.0	0.66	0.51	0.41	0.30	1.9	2.4	2.0	DNGW-071BS-08 2)	1PS5071-■BD■■-4DA3	20	0.0015
0.25	**080 B**	680	3.51	1)	56.0	55.4	50.0	0.66	0.98	0.78	0.57	1.7	2.3	2.0	DNGW-080BS-08 2)	1PS5081-■BD■■-4DA3	27	0.0020
0.37	**090 L**	700	5.0	1)	67.0	67.5	64.0	0.60	1.33	1.06	0.77	1.7	2.5	2.0	DNGW-090LR-08	1PS5095-■BD■■-4DA3	35	0.0036
0.55	**090 L**	700	7.5	1)	69.5	69.5	65.0	0.60	1.90	1.52	1.10	1.7	2.8	2.0	DNGW-090LS-08	1PS5098-■BD■■-4DA3	35	0.0044
0.75	**100 L**	700	10.2	1)	71.9	70.2	66.0	0.70	2.15	1.72	1.25	2.0	3.7	2.1	DNGW-100LR-08	1PS5106-■BD■■-4DA3	55	0.010
1.1	**100 L**	710	14.8	1)	74.7	72.2	68.5	0.70	3.05	2.44	1.77	1.5	4.0	2.0	DNGW-100LS-08	1PS5108-■BD■■-4DA3	55	0.010
1.5	**112 M**	710	20.2	1)	78.0	78.5	76.5	0.73	3.80	3.04	2.20	1.8	4.0	2.0	DNGW-112MS-08	1PS5113-■BD■■-4DA3	65	0.016
2.2	**132 S**	715	29.4	1)	82.5	83.2	81.5	0.73	5.3	4.2	3.07	1.7	4.5	2.1	DNGW-132SR-08	1PS5131-■BD■■-4DA3	90	0.033
3	**132 M**	715	40.1	1)	83.8	84.5	82.9	0.74	7.0	5.6	4.1	1.8	4.5	2.2	DNGW-132MR-08	1PS5133-■BD■■-4DA3	90	0.045
4	**160 M**	720	53	1)	87.3	88.0	87.5	0.80	8.3	6.6	4.8	1.8	5.5	2.2	DNGW-160MR-08	1PS5163-■BD■■-4DA3	176	0.12
5.5	**160 M**	720	73	1)	87.3	88.0	87.5	0.80	11.4	9.1	6.6	1.7	5.6	2.2	DNGW-160MS-08	1PS5165-■BD■■-4DA3	176	0.12
7.5	**160 L**	720	99	1)	87.6	88.7	88.5	0.80	15.4	12.4	9.0	1.7	5.6	2.2	DNGW-160LS-08	1PS5166-■BD■■-4DA3	192	0.16
11	**180 L**	720	146	1)	87.6	88.5	88.0	0.80	22.5	18.1	13.1	1.8	5.0	2.0	DNGW-180LS-08	1PS5186-■BD■■-4DA3	255	0.28
15	**200 L**	725	198	1)	89.8	90.0	89.5	0.78	31.0	24.5	17.9	2.4	5.2	2.2	DNGW-200LR-08	1PS5206-■BD■■-4DA3	333	0.49
18.5	**225 S**	735	240	1)	90.0	90.5	89.8	0.78	38.0	30.5	22.0	2.3	5.5	2.5	DNGW-225SR-08	1PS5220-■BD■■-4DA3	395	0.82
22	**225 M**	735	286	1)	91.0	91.2	90.5	0.78	44.5	36.0	26.0	2.3	5.8	2.5	DNGW-225MS-08	1PS5223-■BD■■-4DA3	430	0.92
30	**250 M**	735	390	1)	91.3	91.5	90.4	0.80	59.0	47.5	34.5	1.9	5.3	2.2	DNGW-250MM-08	1PS5253-■BD■■-4DA3	560	1.1
37	**280 S**	740	477	1)	92.0	92.1	91.0	0.80	73.0	58.0	42.0	2.0	5.3	2.1	DNGW-280SL-08	1PS5280-■BD■■-4DA3	780	1.9
45	**280 M**	740	581	1)	92.4	92.5	91.5	0.80	88.0	70.0	51.0	2.0	5.2	2.1	DNGW-280MM-08	1PS5283-■BD■■-4DA3	850	2.2
55	**315 S**	743	707	1)	94.0	94.4	94.3	0.78	108	87.0	63.0	1.6	6.2	2.1	DNGW-315SL-08	1PS5311-■BD■■-4DA3	1000	3.4
75	**315 M**	742	965	1)	93.8	94.3	94.2	0.79	146	117	85.0	1.6	6.2	2.0	DNGW-315ML-08	1PS5313-■BD■■-4DA3	1170	4.1
90	**315 M**	742	1158	1)	94.0	94.2	94.0	0.79	175	140	101	1.7	6.3	2.0	DNGW-315MM-08	1PS5314-■BD■■-4DA3	1240	4.8
110	**315 M**	742	1416	1)	94.2	94.3	94.0	0.80	210	169	122	1.6	6.0	2.0	DNGW-315MN-08 3)	1PS5315-■BD■■-4DA3	1240	5.2
132	**315 L**	742	1699	1)	94.4	94.7	94.6	0.79	255	205	148	1.6	6.5	2.0	DNGW-315LL-08	1PS5316-■BD■■-4DA3	1390	6.8
160	**315 L**	742	2059	1)	94.6	94.6	94.0	0.79	310	245	179	1.5	6.5	2.5	DNGW-315LM-08 3)	1PS5317-■BD■■-4DA3	1530	7.2
LOHER VARIO																		
200	**355 L**	744	2566	1)	95.2	95.4	94.8	0.82	370	295	214	1.15	5.8	2.35	DNS■-355LB-08	1PS■356-■BH■■-4DA0	2250	14.7
225	**355 L**	744	2886	1)	95.3	95.4	94.8	0.81	420	335	243	1.15	5.8	2.4	DNS■-355LC-08	1PS■357-■BH■■-4DA0	2500	15.7
250	**355 L**	744	3206	1)	95.3	95.4	94.8	0.81	466	373	270	1.2	5.8	2.45	DNS■-355LD-08	1PS■358-■BH■■-4DA0	2600	17.0
280	**355 L**	743	3597	1)	95.8	96.0	95.6	0.81	520	415	300	1.15	5.2	2.3	DNS■-355LN-08	1PS■357-■BJ■■-4DA0	2700	12.5
315	**355 L**	743	4049	1)	95.8	96.0	95.6	0.81	580	465	335	1.05	5.1	2.2	DNS■-355LX-08	1PS■358-■BJ■■-4DA0	2850	13.5
355	**400 L**	743	4559	1)	96.0	96.1	95.6	0.81	655	525	380	1.0	5.1	2.3	DNS■-400LL-08	1PS■404-■BJ■■-4DA0	3400	17.5
400	**400 L**	744	5136	1)	96.1	96.2	95.8	0.82	735	585	425	0.95	5.2	2.25	DNS■-400LN-08	1PS■407-■BJ■■-4DA0	3700	21.0
450	**400 L**	743	5779	1)	96.1	96.3	95.9	0.81	830	665	480	0.95	5.0	2.25	DNS■-400LX-08	1PS■408-■BJ■■-4DA0	3900	23.0
500	**450 L**	745	6411	1)	96.5	96.6	96.1	0.83	900	720	520	0.85	5.2	2.2	DNS■-450LL-08	1PS■455-■BJ■■-4DA0	4700	35.5
560	**450 L**	745	7178	1)	96.5	96.6	96.1	0.84	1000	800	580	0.85	5.4	2.25	DNS■-450LN-08	1PS■457-■BJ■■-4DA0	5100	42.0
630	**450 L**	745	8075	1)	96.6	96.7	96.2	0.83	1130	905	655	0.90	5.3	2.25	DNS■-450LN-08	1PS■458-■BJ■■-4DA0	5100	42.0
670	**450 L**	746	8579	1)	96.7	96.7	96.3	0.83	1210	965	700	0.85	5.2	2.3	DNS■-450LX-08	1PS■450-■BJ■■-4DA0	5300	46.0
710	**500 L**	746	9086	1)	96.7	96.8	96.2	0.85	1240	995	720	0.85	5.8	2.55	DNS■-500LL-08	1PS■504-■BJ■■-4DA0	6200	73.0
800	**500 L**	746	10242	1)	96.7	96.8	96.4	0.85	–	1120	810	0.85	5.6	2.45	DNS■-500LL-08	1PS■505-■BJ■■-4DA0	6200	73.0
900	**500 L**	745	11530	1)	96.5	96.6	96.1	0.84	–	1285	930	1.0	5.5	2.2	DNS■-500LN-08	1PS■507-■BJ■■-4DA0	6900	88.0
950	**500 L**	746	12152	1)	96.7	96.7	96.1	0.83	–	–	990	0.95	5.9	2.4	DNS■-500LX-08	1PS■508-■BJ■■-4DA0	7100	96.0

Enclosures	Frame size								Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**			**4**				–
Ex de IIC/Ex d IIC	71 ... 500	**W**			**5**				–
Operating modes	Frame size								Order code
Mains-fed operation	71 ... 450					**0**			–
Converter-fed operation, standard insulation	71 ... 450					**1**			–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 500					**2**			–
Mains-fed operation, pre-formed coil	500					**3**			–
Converter-fed operation, pre-formed coil	500					**4**			–
Voltages	Frame size								Order code
690 VΔ, 50 Hz	355 ... 500						**0**		–
230 V/400 V, 50 Hz	71 ... 112						**1**		–
500 VY, 50 Hz	71 ... 315						**3**		–
500 VΔ, 50 Hz	355 ... 450						**5**		–
400 V/690 V, 50 Hz	71 ... 400						**6**		–
690 VY, 50 Hz	71 ... 400						**8**		–
For other voltages see Page 2/54	71 ... 500						**9**		...
Types of construction	Frame size								Order code
IM B3	71 ... 500							**0**	–
IM B5	71 ... 315							**1**	–
IM B34	71 ... 112							**2**	–
IM B14	71 ... 112							**3**	–
IM V1/cover	71 ... 450							**4**	–
IM B35	71 ... 500							**6**	–
For other types of construction see from Page 1/28	71 ... 500							**9**	...

1) Outside the IE code classification according to IEC 60034-30.

2) Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

3) Rated output, partial utilization up to 155 °C (F).

2

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Operating values at rated output: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi$ rated, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	I_{rated}, 50 Hz, 500 V	I_{rated}, 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	A	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411) • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																		
10-pole: 600 rpm at 50 Hz																		
LOHER CHEMSTAR on request																		
LOHER VARIO																		
160	**355 L**	594	2570	1)	94.4	94.5	94.0	0.82	298	238	172	1.0	5.0	2.0	*DNS■-355LB-10*	**1PS■356-■BH■■-4EA0**	2250	15.0
180	**355 L**	594	2889	1)	94.6	94.7	94.0	0.81	338	271	196	1.05	5.3	2.15	*DNS■-355LC-10*	**1PS■357-■BH■■-4EA0**	2500	16.5
200	**355 L**	594	3211	1)	94.6	94.8	94.1	0.81	376	300	218	1.05	5.1	2.05	*DNS■-355LD-10*	**1PS■358-■BH■■-4EA0**	2600	18.0
225	**355 L**	593	3620	1)	95.2	95.5	95.1	0.80	425	340	245	1.1	4.8	2.15	*DNS■-355LX-10*	**1PS■358-■BJ■■-4EA0**	2850	19.0
250	**400 L**	594	4014	1)	95.4	95.7	95.2	0.80	475	380	275	0.95	4.7	2.05	*DNS■-400LL-10*	**1PS■404-■BJ■■-4EA0**	3400	27.0
280	**400 L**	595	4495	1)	95.6	95.8	95.3	0.81	520	415	300	0.95	4.7	2.05	*DNS■-400LN-10*	**1PS■405-■BJ■■-4EA0**	3700	32.0
315	**400 L**	595	5058	1)	95.6	95.8	95.4	0.80	595	475	345	0.95	4.7	2.05	*DNS■-400LN-10*	**1PS■407-■BJ■■-4EA0**	3700	32.0
355	**400 L**	595	5700	1)	95.8	96.0	95.6	0.80	665	530	385	0.95	4.8	2.1	*DNS■-400LX-10*	**1PS■408-■BJ■■-4EA0**	3900	35.0
400	**450 L**	595	6418	1)	96.0	96.1	95.5	0.80	750	600	435	1.0	4.9	2.1	*DNS■-450LL-10*	**1PS■454-■BJ■■-4EA0**	4700	42.0
450	**450 L**	595	7221	1)	96.1	96.2	95.6	0.81	835	670	485	0.95	4.8	2.05	*DNS■-450LN-10*	**1PS■455-■BJ■■-4EA0**	5100	50.0
500	**450 L**	595	8020	1)	96.2	96.3	95.7	0.80	940	750	545	0.95	5.0	2.15	*DNS■-450LN-10*	**1PS■457-■BJ■■-4EA0**	5100	50.0
520	**450 L**	595	8336	1)	96.2	96.2	95.6	0.79	985	785	570	1.0	5.1	2.2	*DNS■-450LX-10*	**1PS■458-■BJ■■-4EA0**	5300	55.0
560	**500 L**	596	8965	1)	96.1	96.1	95.3	0.80	1050	840	610	0.85	5.3	2.35	*DNS■-500LL-10*	**1PS■504-■BJ■■-4EA0**	6200	82.0
630	**500 L**	596	10082	1)	96.2	96.2	95.4	0.80	1180	945	685	0.90	5.3	2.4	*DNS■-500LN-10*	**1PS■505-■BJ■■-4EA0**	7000	98.0
670	**500 L**	597	10719	1)	96.3	96.2	95.4	0.80	1260	1005	730	0.95	5.5	2.45	*DNS■-500LN-10*	**1PS■507-■BJ■■-4EA0**	7000	98.0
750	**500 L**	597	11998	1)	96.4	96.3	95.5	0.79	–	–	820	0.95	5.5	2.45	*DNS■-500LX-10*	**1PS■508-■BJ■■-4EA0**	7200	108
12-pole: 500 rpm at 50 Hz																		
LOHER CHEMSTAR on request																		
LOHER VARIO																		
140	**355 L**	492	2713	1)	93.8	94.0	93.2	0.74	292	235	170	0.90	4.4	1.95	*DNS■-355LB-12*	**1PS■356-■BH■■-4FA0**	2250	15.0
160	**355 L**	493	3097	1)	94.1	94.3	93.8	0.78	313	250	181	0.95	4.6	2.1	*DNS■-355LC-12*	**1PS■357-■BH■■-4FA0**	2500	17.0
180	**355 L**	494	3481	1)	94.3	94.5	93.9	0.77	355	285	205	1.0	4.7	2.15	*DNS■-355LD-12*	**1PS■358-■BH■■-4FA0**	2600	19.0
190	**355 L**	494	3672	1)	94.5	94.7	94.3	0.77	375	300	218	0.95	4.6	2.2	*DNS■-355LX-12*	**1PS■358-■BJ■■-4FA0**	2850	18.5
200	**400 L**	494	3861	1)	94.9	95.1	94.7	0.78	390	310	225	0.95	4.6	2.05	*DNS■-400LL-12*	**1PS■404-■BJ■■-4FA0**	3400	26.5
225	**400 L**	495	4341	1)	95.1	95.3	94.9	0.79	430	345	250	1.0	4.7	2.15	*DNS■-400LN-12*	**1PS■405-■BJ■■-4FA0**	3700	32.0
250	**400 L**	495	4824	1)	95.2	95.4	95.0	0.78	485	390	282	1.0	4.6	2.1	*DNS■-400LN-12*	**1PS■407-■BJ■■-4FA0**	3700	32.0
280	**400 L**	495	5402	1)	95.2	95.4	95.0	0.78	545	435	315	1.0	4.8	2.15	*DNS■-400LX-12*	**1PS■408-■BJ■■-4FA0**	3900	35.0
315	**450 L**	495	6075	1)	95.5	95.7	95.3	0.78	610	490	355	0.90	4.5	1.95	*DNS■-450LL-12*	**1PS■454-■BJ■■-4FA0**	4700	42.0
355	**450 L**	495	6842	1)	95.6	95.8	95.4	0.78	690	550	400	0.90	4.6	2.0	*DNS■-450LN-12*	**1PS■455-■BJ■■-4FA0**	5100	50.0
400	**450 L**	495	7709	1)	95.7	95.9	95.4	0.78	785	630	455	0.95	4.6	2.0	*DNS■-450LN-12*	**1PS■457-■BJ■■-4FA0**	5100	50.0
420	**450 L**	495	8095	1)	95.7	95.9	95.4	0.78	810	650	470	0.95	4.7	2.05	*DNS■-450LX-12*	**1PS■458-■BJ■■-4FA0**	5300	55.0
450	**500 L**	496	8662	1)	95.8	95.8	95.2	0.80	845	675	490	0.90	4.8	2.05	*DNS■-500LL-12*	**1PS■504-■BJ■■-4FA0**	6200	82.0
500	**500 L**	496	9617	1)	95.8	95.8	95.1	0.79	950	760	550	0.95	5.1	2.2	*DNS■-500LN-12*	**1PS■505-■BJ■■-4FA0**	7000	98.0
560	**500 L**	496	10779	1)	95.9	96.0	95.3	0.80	1055	840	610	0.90	4.9	2.1	*DNS■-500LN-12*	**1PS■507-■BJ■■-4FA0**	7000	98.0
600	**500 L**	496	11546	1)	96.0	96.1	95.5	0.80	–	905	655	0.90	5.1	2.15	*DNS■-500LX-12*	**1PS■508-■BJ■■-4FA0**	7200	108

Enclosures	Frame size								Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**			**4**				**–**
Ex de IIC/Ex d IIC	355 ... 500	**W**			**5**				**–**
Operating modes	Frame size								Order code
Mains-fed operation	355 ... 450					**0**			–
Converter-fed operation, standard insulation	355 ... 450					**1**			**–**
Converter-fed operation with special insulation (derating approx. 5 %)	355 ... 500					**2**			**–**
Mains-fed operation, pre-formed coil	500					**3**			**–**
Converter-fed operation, pre-formed coil	500					**4**			–
Voltages	Frame size								Order code
690 VΔ, 50 Hz	355 ... 500						**0**		**–**
500 VΔ, 50 Hz	355 ... 450						**5**		**–**
400 V/690 V, 50 Hz	355 ... 400						**6**		**–**
690 VY, 50 Hz	355 ... 400						**8**		–
For other voltages see Page 2/54	355 ... 500						**9**		**...**
Types of construction	Frame size								Order code
IM B3	355 ... 500							**0**	**–**
IM V1/cover	355 ... 450							**4**	**–**
IM B35	355 ... 500							**6**	–
For other types of construction see from Page 1/28	355 ... 500							**9**	**...**

1) Outside the IE code classification according to IEC 60034-30.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	J
kW	FS			kgm²
• Cooling: self-ventilated (IC 411) • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
14-pole: 430 rpm at 50 Hz				
LOHER CHEMSTAR on request				
LOHER VARIO				
110	355 L	*DNS■-355LB-14*	**1PS■356-■BH■■-4GA0**	2250
125	355 L	*DNS■-355LC-14*	**1PS■357-■BH■■-4GA0**	2500
140	355 L	*DNS■-355LD-14*	**1PS■358-■BH■■-4GA0**	2600
160	400 L	*DNS■-400LL-14*	**1PS■404-■BJ■■-4GA0**	3400
180	400 L	*DNS■-400LN-14*	**1PS■405-■BJ■■-4GA0**	3700
200	400 L	*DNS■-400LN-14*	**1PS■407-■BJ■■-4GA0**	3700
225	400 L	*DNS■-400LX-14*	**1PS■408-■BJ■■-4GA0**	3900
250	450 L	*DNS■-450LL-14*	**1PS■454-■BJ■■-4GA0**	4700
280	450 L	*DNS■-450LN-14*	**1PS■455-■BJ■■-4GA0**	5100
315	450 L	*DNS■-450LN-14*	**1PS■457-■BJ■■-4GA0**	5100
340	450 L	*DNS■-450LX-14*	**1PS■458-■BJ■■-4GA0**	5300
355	500 L	*DNS■-500LL-14*	**1PS■504-■BJ■■-4GA0**	6200
400	500 L	*DNS■-500LN-14*	**1PS■505-■BJ■■-4GA0**	7000
450	500 L	*DNS■-500LN-14*	**1PS■507-■BJ■■-4GA0**	7000
500	500 L	*DNS■-500LX-14*	**1PS■508-■BJ■■-4GA0**	7200
16-pole: 375 rpm at 50 Hz				
LOHER CHEMSTAR on request				
LOHER VARIO				
90	355 L	*DNS■-355LB-16*	**1PS■356-■BH■■-4HA0**	2250
100	355 L	*DNS■-355LC-16*	**1PS■357-■BH■■-4HA0**	2500
110	355 L	*DNS■-355LD-16*	**1PS■358-■BH■■-4HA0**	2600
132	400 L	*DNS■-400LL-16*	**1PS■405-■BJ■■-4HA0**	3400
160	400 L	*DNS■-400LN-16*	**1PS■407-■BJ■■-4HA0**	3700
180	400 L	*DNS■-400LX-16*	**1PS■408-■BJ■■-4HA0**	3900
200	450 L	*DNS■-450LL-16*	**1PS■454-■BJ■■-4HA0**	4700
225	450 L	*DNS■-450LN-16*	**1PS■455-■BJ■■-4HA0**	5100
250	450 L	*DNS■-450LN-16*	**1PS■457-■BJ■■-4HA0**	5100
265	450 L	*DNS■-450LX-16*	**1PS■458-■BJ■■-4HA0**	5300
280	500 L	*DNS■-500LL-16*	**1PS■504-■BJ■■-4HA0**	6200
315	500 L	*DNS■-500LN-16*	**1PS■505-■BJ■■-4HA0**	7000
355	500 L	*DNS■-500LN-16*	**1PS■507-■BJ■■-4HA0**	7000
400	500 L	*DNS■-500LX-16*	**1PS■508-■BJ■■-4HA0**	7200

Enclosures	Frame size								Order code
Ex de IIB/Ex d IIB	355 ... 500	**L**			**4**				–
Ex de IIC/Ex d IIC	355 ... 500	**W**			**5**				–
Operating modes	Frame size								Order code
Mains-fed operation	355 ... 450					**0**			–
Converter-fed operation, standard insulation	355 ... 450					**1**			–
Converter-fed operation with special insulation (derating approx. 5 %)	355 ... 500					**2**			–
Mains-fed operation, pre-formed coil	500					**3**			–
Converter-fed operation, pre-formed coil	500					**4**			–
Voltages	Frame size								Order code
690 VΔ, 50 Hz	355 ... 500						**0**		–
500 VΔ, 50 Hz	355 ... 450						**5**		–
400 V/690 V, 50 Hz	355 ... 400						**6**		–
690 VY, 50 Hz	355 ... 400						**8**		–
For other voltages see Page 2/54	355 ... 500						**9**		...
Types of construction	Frame size								Order code
IM B3	355 ... 500							**0**	–
IM V1/cover	355 ... 450							**4**	–
IM B35	355 ... 500							**6**	–
For other types of construction see from Page 1/28	355 ... 500							**9**	...

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Selection and ordering data (continued)

P_{rated}, 60 Hz	Frame size	Operating values at rated output: n_{rated}, 60 Hz	T_{rated}, 60 Hz	IE class	η_{rated}, 60 Hz, 4/4	η_{rated}, 60 Hz, 3/4	η_{rated}, 60 Hz, 2/4	$\cos\varphi$ rated, 60 Hz, 4/4	I_{rated}, 60 Hz, 480 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30 • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																
2-pole: 3600 rpm at 60 Hz																
LOHER CHEMSTAR																
0.44	**071 B**	3360	1.25	IE2 [1]	76.5	77.5	75.6	0.88	0.79	2.7	5.5	2.9	*DNGW-071BR-02* [2]	**1PS5070-■BD■■-4AA3**	24	0.0006
0.66	**071 B**	3370	1.88	IE2 [1]	76.5	77.5	75.6	0.88	1.18	2.7	5.5	2.9	*DNGW-071BS-02* [2]	**1PS5071-■BD■■-4AA3**	25	0.0006
0.9	**080 B**	3370	2.55	IE2	80.1	80.8	79.2	0.89	1.52	2.7	6.0	2.9	*DNGW-080BR-02* [2]	**1PS5080-■BD■■-4AA3**	26	0.0008
1.2	**080 B**	3400	3.37	IE2	82.5	82.7	81.5	0.82	2.15	2.9	6.0	2.7	*DNGW-080BS-02* [2]	**1PS5081-■BD■■-4AA3**	28	0.0008
1.8	**090 L**	3460	4.97	IE2	85.4	85.6	84.5	0.88	2.85	3.0	7.0	2.8	*DNGW-090LR-02*	**1PS5095-■BD■■-4AA3**	36	0.0020
2.6	**090 L**	3460	7.2	IE2	85.5	85.8	84.7	0.84	4.4	3.0	7.0	3.0	*DNGW-090LS-02*	**1PS5098-■BD■■-4AA3**	36	0.0020
3.6	**100 L**	3510	9.8	IE2	87.5	87.1	85.2	0.85	5.8	2.9	8.0	3.0	*DNGW-100LS-02*	**1PS5106-■BD■■-4AA3**	51	0.0041
4.5	**112 M**	3490	12.3	IE2	87.5	87.7	87.2	0.94	6.6	2.7	7.8	3.0	*DNGW-112MS-02*	**1PS5113-■BD■■-4AA3**	66	0.0075
6.6	**132 S**	3510	18.0	IE2	89.5	88.7	87.2	0.89	10.0	3.0	7.8	3.0	*DNGW-132SR-02*	**1PS5131-■BD■■-4AA3**	83	0.014
9	**132 S**	3510	24.5	IE2	90.1	91.0	90.1	0.91	13.1	2.7	7.0	3.0	*DNGW-132SS-02*	**1PS5132-■BD■■-4AA3**	95	0.020
13.2	**160 M**	3550	36	IE2	90.8	91.2	91.0	0.88	19.9	2.0	7.5	2.6	*DNGW-160MR-02*	**1PS5163-■BD■■-4AA3**	176	0.045
18	**160 M**	3550	48	IE2	91.5	91.8	91.2	0.89	26.5	1.9	7.0	2.6	*DNGW-160MS-02*	**1PS5165-■BD■■-4AA3**	176	0.092
22	**160 L**	3550	59	IE2	91.5	91.8	91.2	0.89	32.5	2.0	7.0	2.7	*DNGW-160LS-02*	**1PS5166-■BD■■-4AA3**	192	0.092
26	**180 M**	3560	70	IE2	92.5	93.0	92.4	0.89	38.0	2.6	7.0	2.6	*DNGW-180MS-02*	**1PS5183-■BD■■-4AA3**	246	0.16
36	**200 L**	3565	96	IE2	92.6	92.8	92.0	0.89	53.0	2.0	7.2	2.6	*DNGW-200LR-02*	**1PS5206-■BD■■-4AA3**	333	0.20
44	**200 L**	3565	118	IE2	93.0	93.1	92.4	0.89	64.0	2.0	7.2	2.6	*DNGW-200LS-02*	**1PS5208-■BD■■-4AA3**	349	0.23
54	**225 M**	3565	145	IE2	93.2	93.4	92.8	0.88	79.0	2.2	7.6	2.6	*DNGW-225MS-02*	**1PS5223-■BD■■-4AA3**	420	0.34
66	**250 M**	3575	176	IE2	93.8	93.7	92.6	0.88	96.0	1.9	7.5	2.6	*DNGW-250MM-02*	**1PS5253-■BD■■-4AA3**	540	0.45
90	**280 S**	3575	240	IE2	94.5	94.5	93.0	0.90	127	1.7	7.0	2.4	*DNGW-280SL-02*	**1PS5280-■BD■■-4AA3**	775	0.88
110	**280 M**	3580	293	IE2	95.1	95.0	93.9	0.89	156	2.4	7.7	2.7	*DNGW-280MM-02*	**1PS5283-■BD■■-4AA3**	830	1.03
125	**315 S**	3580	333	IE2	94.6	94.4	93.2	0.87	183	1.9	7.0	2.5	*DNGW-315SL-02*	**1PS5311-■BD■■-4AA3**	1030	1.55
145	**315 M**	3580	387	IE2	95.1	95.0	93.8	0.89	205	2.0	7.7	2.6	*DNGW-315ML-02*	**1PS5313-■BD■■-4AA3**	1080	1.85
180	**315 M**	3581	480	IE2	95.4	95.4	94.4	0.88	260	2.2	7.5	2.7	*DNGW-315MN-02*	**1PS5315-■BD■■-4AA3**	1160	2.2
220	**315 L**	3580	587	IE2	95.8	95.9	95.4	0.90	305	2.5	7.3	2.7	*DNGW-315LL-02*	**1PS5316-■BD■■-4AA3**	1390	2.8
270	**315 L**	3580	720	IE2	95.8	95.9	95.4	0.90	375	2.6	7.7	2.7	*DNGW-315LN-02*	**1PS5318-■BD■■-4AA3**	1570	3.5
LOHER VARIO																
355	**355 L**	3581	947	IE2	96.1	95.9	94.9	0.89	500	2.2	6.8	2.6	*DNS■-355LB-02*	**1PS5356-■BH■■-4AA0**	2000	3.6
400	**355 L**	3583	1066	IE2 [1]	96.4	96.3	95.6	0.92	541	1.15	6.7	2.75	*DNS■-355LC-02*	**1PS■357-■BH■■-4AA0**	2150	3.6
450	**355 L**	3585	1198	IE2 [1]	96.6	96.5	95.7	0.92	610	1.2	7.4	3.0	*DNS■-355LD-02*	**1PS■358-■BH■■-4AA0**	2250	4.0
500	**355 L**	3579	1334	IE2 [1]	96.3	96.2	95.5	0.91	683	0.90	6.3	2.65	*DNS■-355LX-02*	**1PS■358-■BJ■■-4AA0**	2600	5.0
500	**400 L**	3581	1333	IE2 [1]	96.4	96.3	95.5	0.90	688	0.65	5.7	2.45	*DNS■-400LL-02*	**1PS■404-■BJ■■-4AA0**	3000	6.0
560	**400 L**	3584	1492	IE2 [1]	96.6	96.5	95.7	0.91	765	0.80	6.5	2.8	*DNS■-400LN-02*	**1PS■405-■BJ■■-4AA0**	3200	7.0
630	**400 L**	3583	1679	IE2 [1]	96.7	96.6	96.0	0.91	862	0.75	6.1	2.65	*DNS■-400LN-02*	**1PS■407-■BJ■■-4AA0**	3200	7.0
710	**400 L**	3585	1891	IE2 [1]	96.7	96.6	95.9	0.91	675 [3]	0.80	6.5	2.75	*DNS■-400LX-02*	**1PS■408-■BJ■■-4AA0**	3500	8.3
710	**450 L**	3586	1890	IE2 [1]	96.3	96.1	95.1	0.90	685 [3]	0.70	6.2	2.7	*DNS■-450LL-02*	**1PS■455-■BJ■■-4AA0**	4200	12
800	**450 L**	3586	2130	IE2 [1]	96.5	96.3	95.3	0.91	762 [3]	0.80	6.4	2.85	*DNS■-450LN-02*	**1PS■457-■BJ■■-4AA0**	4500	14
900	**450 L**	3586	2396	IE2 [1]	96.6	96.4	95.6	0.90	865 [3]	0.80	6.4	2.8	*DNS■-450LN-02*	**1PS■458-■BJ■■-4AA0**	4500	14

Enclosures	Frame size								Order code
Ex de IIB/Ex d IIB	355 ... 450	**L**			**4**				**–**
Ex de IIC/Ex d IIC	71 ... 450	**W**			**5**				**–**
Operating modes	Frame size								Order code
Mains-fed operation	71 ... 450 (≤ 900 kW)					**0**			**–**
Converter-fed operation, standard insulation	71 ... 400					**1**			**–**
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 450					**2**			**–**
Mains-fed operation, pre-formed coil	450 (> 900 kW)					**3**			**–**
Converter-fed operation, pre-formed coil	450					**4**			**–**
Voltages	Frame size								Order code
For other voltages see Page 2/54	71 ... 450						**9**		**...**
Types of construction	Frame size								Order code
IM B3	71 ... 450							**0**	**–**
IM B5	71 ... 315							**1**	**–**
IM B34	71 ... 112							**2**	**–**
IM B14	71 ... 112							**3**	**–**
IM V1/cover	71 ... 400							**4**	**–**
IM B35	71 ... 450							**6**	**–**
For other types of construction see from Page 1/28	71 ... 450							**9**	**...**

[1] Outside the IE code classification according to IEC 60034-30.

[2] Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

[3] Only possible with 690 V, 60 Hz (values apply to 690 V).

Selection and ordering data (continued)

P_{rated}, 60 Hz	Frame size	Operating values at rated output: n_{rated}, 60 Hz	T_{rated}, 60 Hz	IE class	η_{rated}, 60 Hz, 4/4	η_{rated}, 60 Hz, 3/4	η_{rated}, 60 Hz, 2/4	cos φ rated, 60 Hz, 4/4	I_{rated}, 480 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30 • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																
4-pole: 1800 rpm at 60 Hz																
LOHER CHEMSTAR																
0.3	071 B	1700	1.69	1) IE2	75.0	76.5	74.0	0.73	0.66	2.2	4.3	2.3	DNGW-071BR-04 2)	1PS5070-■BD■■-4BA3	24	0.0015
0.44	071 B	1700	2.47	1) IE2	78.0	78.5	76.8	0.73	0.93	2.5	4.8	2.5	DNGW-071BS-04 2)	1PS5071-■BD■■-4BA3	24	0.0020
0.66	080 B	1700	3.71	1) IE2	79.0	80.0	78.8	0.75	1.34	2.5	5.0	2.5	DNGW-080BR-04 2)	1PS5080-■BD■■-4BA3	27	0.0030
0.9	080 B	1760	4.88	IE2	86.2	86.0	83.5	0.74	1.71	2.1	7.0	2.5	DNGW-080BS-04 2)	1PS5081-■BD■■-4BA3	28	0.0030
1.3	090 L	1760	7.1	IE2	85.6	85.2	82.0	0.82	2.25	2.2	7.2	2.7	DNGW-090LR-04	1PS5095-■BD■■-4BA3	34	0.0044
1.8	090 L	1760	9.8	IE2	87.8	88.0	86.6	0.80	3.10	2.2	7.4	2.7	DNGW-090LS-04	1PS5098-■BD■■-4BA3	37	0.0044
2.6	100 L	1755	14.1	IE2	88.0	88.3	87.2	0.83	4.3	1.9	7.0	2.5	DNGW-100LR-04	1PS5106-■BD■■-4BA3	53	0.0060
3.6	100 L	1760	19.5	IE2	87.5	87.0	85.2	0.79	6.3	1.8	7.0	2.4	DNGW-100LS-04	1PS5108-■BD■■-4BA3	55	0.0071
4.8	112 M	1760	26.0	IE2	89.9	90.3	89.5	0.83	7.8	1.9	7.0	2.5	DNGW-112MS-04	1PS5113-■BD■■-4BA3	66	0.0126
6.6	132 S	1750	36.0	IE2	89.8	90.4	89.9	0.86	10.3	2.4	7.5	2.7	DNGW-132SR-04	1PS5131-■BD■■-4BA3	93	0.03
9	132 M	1765	48.7	IE2	90.1	90.5	89.7	0.86	14.0	2.0	7.5	2.2	DNGW-132MS-04	1PS5133-■BD■■-4BA3	102	0.03
13	160 M	1765	70.0	IE2	91.1	91.5	91.0	0.85	20.0	3.0	7.5	2.6	DNGW-160MR-04	1PS5163-■BD■■-4BA3	176	0.10
18	160 L	1770	97.0	IE2	92.4	92.1	91.8	0.85	27.5	3.0	7.5	2.6	DNGW-160LS-04	1PS5166-■BD■■-4BA3	192	0.13
22	180 M	1775	118	IE2	92.5	93.0	92.2	0.84	34.0	1.8	7.5	2.8	DNGW-180MR-04	1PS5183-■BD■■-4BA3	246	0.20
26	180 L	1775	140	IE2	93.7	94.0	93.5	0.85	39.5	1.8	7.5	2.6	DNGW-180LS-04	1PS5186-■BD■■-4BA3	255	0.23
36	200 L	1780	193	IE2	94.2	94.4	93.9	0.83	55.0	3.0	7.5	2.9	DNGW-200LS-04	1PS5206-■BD■■-4BA3	333	0.37
44	225 S	1780	236	IE2	93.7	94.0	93.5	0.85	66.0	2.0	7.0	2.6	DNGW-225SR-04	1PS5220-■BD■■-4BA3	415	0.64
54	225 M	1780	290	IE2	94.2	94.7	94.6	0.85	81.0	2.0	7.0	2.6	DNGW-225MS-04	1PS5223-■BD■■-4BA3	445	0.72
66	250 M	1780	354	IE2	94.5	94.4	94.2	0.86	98.0	2.1	7.7	2.7	DNGW-250MM-04	1PS5253-■BD■■-4BA3	560	0.79
90	280 S	1785	481	IE2	94.6	94.8	94.5	0.84	136	2.2	7.0	2.5	DNGW-280SL-04	1PS5280-■BD■■-4BA3	820	1.44
110	280 M	1785	588	IE2	95.2	95.2	94.8	0.84	165	2.5	7.0	2.7	DNGW-280MM-04	1PS5283-■BD■■-4BA3	870	1.66
125	315 S	1787	668	IE2	95.0	95.0	94.0	0.82	193	2.2	7.0	2.5	DNGW-315SL-04	1PS5311-■BD■■-4BA3	1020	2.2
145	315 M	1787	775	IE2	95.1	95.2	94.7	0.84	220	2.0	7.0	2.2	DNGW-315ML-04	1PS5313-■BD■■-4BA3	1110	2.9
180	315 M	1787	962	IE2	95.4	95.4	94.8	0.83	275	2.4	7.5	2.5	DNGW-315MN-04	1PS5315-■BD■■-4BA3	1190	3.4
220	315 L	1787	1176	IE2	95.4	95.6	95.0	0.84	330	2.3	7.5	2.5	DNGW-315LL-04	1PS5316-■BD■■-4BA3	1400	3.9
270	315 L	1787	1443	IE2	95.8	95.8	95.5	0.85	400	2.3	7.5	2.4	DNGW-315LM-04	1PS5317-■BD■■-4BA3	1520	4.2
LOHER VARIO																
315	355 L	1789	1681	IE2	95.9	95.6	94.4	0.85	463	2.1	6.7	2.4	DNS ■-355LB-04	1PS■356-■BH■■-4BA0	2200	6.5
355	355 L	1791	1891	IE2	96.4	96.3	95.5	0.85	518	1.2	6.8	2.5	DNS ■-355LB-04	1PS■357-■BH■■-4BA0	2200	7.0
400	355 L	1791	2133	1) IE2	96.4	96.3	95.5	0.86	578	1.1	6.5	2.3	DNS ■-355LB-04	1PS■358-■BH■■-4BA0	2350	7.7
450	355 L	1791	2399	1) IE2	96.5	96.4	95.6	0.86	651	1.1	6.5	2.3	DNS ■-355LB-04	1PS■350-■BH■■-4BA0	2500	8.5
500	355 L	1791	2664	1) IE2	96.6	96.5	95.9	0.86	724	1.05	6.3	2.45	DNS ■-355LB-04	1PS■357-■BJ■■-4BA0	2900	9.0
560	355 L	1792	2984	1) IE2	96.7	96.6	95.9	0.85	820	1.0	6.5	2.5	DNS ■-355LB-04	1PS■358-■BJ■■-4BA0	3000	9.5
560	400 L	1791	2984	1) IE2	96.5	96.4	95.6	0.88	793	1.0	6.2	2.55	DNS ■-400LL-04	1PS■404-■BJ■■-4BA0	3500	13
630	400 L	1791	3357	1) IE2	96.6	96.5	95.8	0.89	885	1.0	6.0	2.45	DNS ■-400LN-04	1PS■405-■BJ■■-4BA0	3700	15
710	400 L	1791	3784	1) IE2	96.7	96.6	96.0	0.89	995	0.95	5.7	2.3	DNS ■-400LN-04	1PS■407-■BJ■■-4BA0	3700	15
800	400 L	1792	4263	1) IE2	96.8	96.8	96.1	0.88	1123	0.95	6.1	2.31	DNS ■-400LX-04	1PS■408-■BJ■■-4BA0	3900	17
900	450 L	1793	4792	1) IE2	96.9	96.8	96.1	0.88	1265	0.90	6.4	2.32	DNS ■-450LL-04	1PS■455-■BJ■■-4BA0	4500	24.5
1000	450 L	1793	5324	1) IE2	96.9	96.8	96.2	0.88	980 3)	0.85	6.0	2.33	DNS ■-450LN-04	1PS■457-■BJ■■-4BA0	5000	29

Enclosures	Frame size												Order code
Ex de IIB/Ex d IIB	355 ... 450	L				4							–
Ex de IIC/Ex d IIC	71 ... 450	W				5							–
Operating modes	**Frame size**												**Order code**
Mains-fed operation	71 ... 450 (≤ 800 kW)						0						–
Converter-fed operation, standard insulation	71 ... 400						1						–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 450						2						–
Mains-fed operation, pre-formed coil	450 (> 800 kW)						3						–
Converter-fed operation, pre-formed coil	450						4						–
Voltages	**Frame size**												**Order code**
For other voltages see Page 2/54	71 ... 450								9				...
Types of construction	**Frame size**												**Order code**
IM B3	71 ... 450									0			–
IM B5	71 ... 315									1			–
IM B34	71 ... 112									2			–
IM B14	71 ... 112									3			–
IM V1/cover	71 ... 400									4			–
IM B35	71 ... 450									6			–
For other types of construction see from Page 1/28	71 ... 450									9			...

1) Outside the IE code classification according to IEC 60034-30.

2) Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

3) Only possible with 690 V, 60 Hz (values apply to 690 V).

2

Selection and ordering data (continued)

P_{rated}, 60 Hz	Frame size	Operating values at rated output: n_{rated}, 60 Hz	T_{rated}, 60 Hz	IE class	η_{rated}, 60 Hz, 4/4	η_{rated}, 60 Hz, 3/4	η_{rated}, 60 Hz, 2/4	$\cos\varphi$ rated, 60 Hz, 4/4	I_{rated}, 60 Hz, 480 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	–	%	%	%	–	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30 • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																
6-pole: 1200 rpm at 60 Hz																
LOHER CHEMSTAR																
0.3	**071 B**	1110	2.58	[1]	69.0	69.5	65.5	0.69	0.76	2.2	4.0	2.1	*DNGW-071BS-06* [2]	**1PS5071-■BD■■-4CA3**	24	0.0015
0.44	**080 B**	1110	3.79	[1]	70.0	71.0	70.0	0.70	1.08	2	4.0	2.2	*DNGW-080BR-06* [2]	**1PS5080-■BD■■-4CA3**	27	0.0020
0.66	**080 B**	1130	5.6	[1]	75.0	75.0	72.0	0.66	1.64	2.3	4.5	2.4	*DNGW-080BS-06* [2]	**1PS5081-■BD■■-4CA3**	30	0.0030
0.75	**090 L**	1160	6.2	IE2	81.8	82.0	80.1	0.72	1.53	1.5	5.0	2.5	*DNGW-090LR-06*	**1PS5095-■BD■■-4CA3**	36	0.0044
0.9	**090 L**	1160	7.4	IE2	82.0	82.0	80.2	0.72	1.83	1.4	5.1	2.4	*DNGW-090LS-06*	**1PS5098-■BD■■-4CA3**	42	0.0044
1.25	**100 L**	1175	10.2	IE2	85.5	85.2	82.3	0.73	2.4	1.5	5.6	2.4	*DNGW-100LS-06*	**1PS5106-■BD■■-4CA3**	55	0.010
1.8	**112 M**	1180	14.6	IE2	86.6	86.5	83.0	0.73	3.4	1.3	5.8	2.5	*DNGW-112MS-06*	**1PS5113-■BD■■-4CA3**	66	0.019
3	**132 S**	1170	24.5	IE2	87.9	87.6	85.3	0.74	5.5	2.4	6.6	3.0	*DNGW-132SR-06*	**1PS5131-■BD■■-4CA3**	92	0.033
4	**132 M**	1160	32.9	IE2	88.3	88.9	88.1	0.79	6.9	2.1	6.6	2.7	*DNGW-132MR-06*	**1PS5133-■BD■■-4CA3**	96	0.045
5.5	**132 M**	1180	44.5	IE2	90.0	90.2	89.0	0.80	9.2	1.5	6.5	2.3	*DNGW-132MS-06*	**1PS5135-■BD■■-4CA3**	104	0.045
7.5	**160 M**	1170	61	IE2	89.6	89.7	88.0	0.80	12.6	1.3	6.2	2.4	*DNGW-160MR-06*	**1PS5163-■BD■■-4CA3**	176	0.088
11	**160 L**	1170	90	IE2	90.2	90.4	89.0	0.80	18.3	1.3	6.5	2.4	*DNGW-160LS-06*	**1PS5166-■BD■■-4CA3**	192	0.11
15	**180 L**	1180	121	IE2	91.0	91.4	90.7	0.81	24.5	2.4	7.0	2.5	*DNGW-180LS-06*	**1PS5186-■BD■■-4CA3**	255	0.28
18.5	**200 L**	1180	150	IE2	91.7	91.7	90.8	0.80	30.5	2.5	7.0	2.6	*DNGW-200LR-06*	**1PS5206-■BD■■-4CA3**	333	0.45
22	**200 L**	1180	178	IE2	91.8	91.8	91.0	0.80	36.0	2.5	7.0	2.6	*DNGW-200LS-06*	**1PS5208-■BD■■-4CA3**	349	0.49
30	**225 M**	1180	243	IE2	93.0	93.0	92.0	0.82	47.5	2.0	7.0	2.8	*DNGW-225MS-06*	**1PS5223-■BD■■-4CA3**	430	0.92
37	**250 M**	1185	298	IE2	93.2	93.2	92.3	0.80	60.0	1.4	7.0	2.6	*DNGW-250MM-06*	**1PS5253-■BD■■-4CA3**	560	1.0
45	**280 S**	1189	361	IE2	93.6	93.6	93.2	0.85	68.0	2.3	6.5	2.5	*DNGW-280SL-06*	**1PS5280-■BD■■-4CA3**	780	2.5
55	**280 M**	1190	441	IE2	93.8	93.8	93.0	0.84	84.0	2.5	7.2	2.8	*DNGW-280MM-06*	**1PS5283-■BD■■-4CA3**	850	2.9
75	**315 S**	1190	602	IE2	94.8	94.9	94.3	0.86	111	2.2	7.2	2.4	*DNGW-315SL-06*	**1PS5311-■BD■■-4CA3**	1030	3.3
90	**315 M**	1190	722	IE2	94.3	94.4	94.0	0.86	133	2.0	7.2	2.2	*DNGW-315ML-06*	**1PS5313-■BD■■-4CA3**	1100	4.0
110	**315 M**	1190	883	IE2	95.0	95.2	95.0	0.87	160	1.8	7.1	2.2	*DNGW-315MM-06*	**1PS5314-■BD■■-4CA3**	1190	4.9
132	**315 M**	1190	1059	IE2	95.2	95.2	95.0	0.86	194	2.0	7.2	2.3	*DNGW-315MN-06*	**1PS5315-■BD■■-4CA3**	1180	4.9
160	**315 L**	1190	1284	IE2	95.2	95.3	95.0	0.86	235	2.2	7.5	2.5	*DNGW-315LL-06*	**1PS5316-■BD■■-4CA3**	1400	6.0
200	**315 L**	1190	1605	IE2	95.2	95.2	95.0	0.84	300	2.4	7.6	2.6	*DNGW-315LM-06*	**1PS5317-■BD■■-4CA3**	1600	6.8
LOHER VARIO on request																

Enclosures	Frame size							Order code
Ex de IIB/Ex d IIB	71 ... 315							–
Ex de IIC/Ex d IIC	71 ... 315							–
Operating modes	Frame size							Order code
Mains-fed operation	71 ... 315	**0**						–
Converter-fed operation, standard insulation	71 ... 315	**1**						–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 315	**2**						–
Voltages	Frame size							Order code
For other voltages see Page 2/54	71 ... 315					**9**		...
Types of construction	Frame size							Order code
IM B3	71 ... 315						**0**	–
IM B5	71 ... 315						**1**	–
IM B34	71 ... 112						**2**	–
IM B14	71 ... 112						**3**	–
IM V1/cover	71 ... 315						**4**	–
IM B35	71 ... 315						**6**	–
For other types of construction see from Page 1/28	71 ... 315						**9**	...

[1] Outside the IE code classification according to IEC 60034-30.

[2] Variant can be supplied as Ex nA, Loher type changes to *ANGK....*

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for constant load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
4-/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit				
LOHER CHEMSTAR				
0.65/0.85	80 B	*DNGW-080BS-42*	1PS5081-■BD■■-4NA3	28
1.45/1.9	90 L	*DNGW-090LS-42*	1PS5098-■BD■■-4NA3	37
2/2.4	100 L	*DNGW-100LR-42*	1PS5106-■BD■■-4NA3	53
2.6/3.2	100 L	*DNGW-100LS-42*	1PS5108-■BD■■-4NA3	55
3.6/4.3	112 M	*DNGW-112MS-42* [1]	1PS5113-■BD■■-4NA3	66
4.9/6	132 S	*DNGW-132SR-42* [1]	1PS5131-■BD■■-4NA3	93
6.5/9	132 M	*DNGW-132MR-42*	1PS5133-■BD■■-4NA3	102
9/11	160 M	*DNGW-160MR-42*	1PS5163-■BD■■-4NA3	176
13/16	160 L	*DNGW-160LS-42*	1PS5166-■BD■■-4NA3	192
16.5/20	180 M	*DNGW-180MR-42*	1PS5183-■BD■■-4NA3	246
18.5/25	180 L	*DNGW-180LS-42*	1PS5186-■BD■■-4NA3	255
26/31	200 L	*DNGW-200LS-42*	1PS5206-■BD■■-4NA3	333
32/38	225 S	*DNGW-225SR-42*	1PS5220-■BD■■-4NA3	415
38/46	225 M	*DNGW-225MS-42*	1PS5223-■BD■■-4NA3	420
45/55	250 M	*DNGW-250MM-42*	1PS5253-■BD■■-4NA3	540
60/75	280 S	*DNGW-280SL-42*	1PS5280-■BD■■-4NA3	775
73/90	280 M	*DNGW-280MM-42*	1PS5283-■BD■■-4NA3	830
82/96	315 S	*DNGW-315SL-42*	1PS5311-■BD■■-4NA3	1020
100/124	315 M	*DNGW-315ML-42*	1PS5313-■BD■■-4NA3	1120
120/145	315 M	*DNGW-315MN-42*	1PS5315-■BD■■-4NA3	1190
142/172	315 L	*DNGW-315LL-42*	1PS5316-■BD■■-4NA3	1430
150/200	315 L	*DNGW-315LM-42*	1PS5317-■BD■■-4NA3	1520

LOHER VARIO on request

Operating modes	Frame size					Order code
Mains-fed operation	80 ... 315	**0**				–
Converter-fed operation, standard insulation	80 ... 315	**1**				–
Voltages	Frame size					Order code
230 V, 50 Hz	80 ... 312		**1**			–
500 VY, 50 Hz	80 ... 315		**3**			–
400 V, 50 Hz	80 ... 315		**6**			–
690 VY, 50 Hz	80 ... 315		**8**			–
For other voltages see Page 2/54	80 ... 315		**9**			...
Types of construction	Frame size					Order code
IM B3	80 ... 315			**0**		–
IM B5	80 ... 315			**1**		–
IM B34	80 ... 312			**2**		–
IM B14	80 ... 312			**3**		–
IM V1/cover	80 ... 315			**4**		–
IM B35	80 ... 315			**6**		–
For other types of construction see from Page 1/28	80 ... 315			**9**		...

[1] Rated output, partial utilization up to 155 °C (F).

2

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for constant load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
8-/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit				
LOHER CHEMSTAR				
0.5/0.8	**90 L**	*DNGW-090LS-84*	**1PS5098-■BD■■-4QA3**	37
0.9/1.3	**100 L**	*DNGW-100LR-84*	**1PS5106-■BD■■-4QA3**	53
1/1.6	**100 L**	*DNGW-100LS-84*	**1PS5108-■BD■■-4QA3**	55
1.4/2.2	**112 M**	*DNGW-112MS-84*	**1PS5113-■BD■■-4QA3**	66
2.3/3.4	**132 S**	*DNGW-132SR-84*	**1PS5131-■BD■■-4QA3**	93
3/5	**132 M**	*DNGW-132MR-84*	**1PS5133-■BD■■-4QA3**	102
4/5.5	**160 M**	*DNGW-160MR-84*	**1PS5163-■BD■■-4QA3**	176
5/7.5	**160 M**	*DNGW-160MS-84*	**1PS5165-■BD■■-4QA3**	176
7/11	**160 L**	*DNGW-160LS-84*	**1PS5166-■BD■■-4QA3**	192
11/18	**180 L**	*DNGW-180LS-84* [1]	**1PS5186-■BD■■-4QA3**	255
17/25	**200 L**	*DNGW-200LR-84*	**1PS5206-■BD■■-4QA3**	333
22/31	**225 S**	*DNGW-225SR-84* [1]	**1PS5220-■BD■■-4QA3**	405
26/38	**225 M**	*DNGW-225MS-84* [1]	**1PS5223-■BD■■-4QA3**	445
32/46	**250 M**	*DNGW-250MM-84*	**1PS5253-■BD■■-4QA3**	560
42/60	**280 S**	*DNGW-280SL-84*	**1PS5280-■BD■■-4QA3**	780
50/72	**280 M**	*DNGW-280MM-84* [1]	**1PS5283-■BD■■-4QA3**	850
60/83	**315 S**	*DNGW-315SL-84*	**1PS5311-■BD■■-4QA3**	1020
72/110	**315 M**	*DNGW-315ML-84*	**1PS5313-■BD■■-4QA3**	1170
90/132	**315 M**	*DNGW-315MN-84*	**1PS5315-■BD■■-4QA3**	1240
115/160	**315 L**	*DNGW-315LL-84* [1]	**1PS5316-■BD■■-4QA3**	1430
145/220	**315 L**	*DNGW-315LM-84* [1]	**1PS5317-■BD■■-4QA3**	1530

LOHER VARIO on request

Operating modes	Frame size				Order code
Mains-fed operation	90 ... 315	**0**			–
Converter-fed operation, standard insulation	90 ... 315	**1**			–
Voltages	Frame size				Order code
230 V, 50 Hz	90 ... 112		**1**		–
500 VY, 50 Hz	90 ... 315		**3**		–
400 V, 50 Hz	90 ... 315		**6**		–
690 VY, 50 Hz	90 ... 315		**8**		–
For other voltages see Page 2/54	90 ... 315		**9**		...
Types of construction	Frame size				Order code
IM B3	90 ... 315			**0**	–
IM B5	90 ... 315			**1**	–
IM B34	90 ... 112			**2**	–
IM B14	90 ... 112			**3**	–
IM V1/cover	90 ... 315			**4**	–
IM B35	90 ... 315			**6**	–
For other types of construction see from Page 1/28	90 ... 315			**9**	...

[1] Rated output, partial utilization up to 155 °C (F).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for constant load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
6-/4-pole: 1000/1500 rpm at 50 Hz with two separate windings				
LOHER CHEMSTAR				
0.6/0.9	**90 L**	*DNGW-090LS-64*	**1PS5098-■BD■■-4PA3**	37
0.9/1.3	**100 L**	*DNGW-100LR-64*	**1PS5106-■BD■■-4PA3**	53
1.1/1.5	**100 L**	*DNGW-100LS-64*	**1PS5108-■BD■■-4PA3**	55
1.5/2.2	**112 M**	*DNGW-112MS-64*	**1PS5113-■BD■■-4PA3**	66
2.2/3.3	**132 S**	*DNGW-132SR-64*	**1PS5131-■BD■■-4PA3**	93
3/4.5	**132 M**	*DNGW-132MR-64*	**1PS5133-■BD■■-4PA3**	102
4.5/6.5	**160 M**	*DNGW-160MR-64*	**1PS5163-■BD■■-4PA3**	176
6.5/9.5	**160 M**	*DNGW-160LS-64*	**1PS5166-■BD■■-4PA3**	192
11/16	**160 L**	*DNGW-180LS-64*	**1PS5186-■BD■■-4PA3**	255
13/19	**180 L**	*DNGW-200LR-64*	**1PS5206-■BD■■-4PA3**	333
15/23	**200 L**	*DNGW-200LS-64*	**1PS5208-■BD■■-4PA3**	349
18/27	**225 S**	*DNGW-225SR-64*	**1PS5220-■BD■■-4PA3**	395
21/31	**225 M**	*DNGW-225MS-64*	**1PS5223-■BD■■-4PA3**	445
28/40	**250 M**	*DNGW-250MM-64*	**1PS5253-■BD■■-4PA3**	560
43/65	**280 S**	*DNGW-280SL-64*	**1PS5280-■BD■■-4PA3**	820
52/78	**280 M**	*DNGW-280MM-64*	**1PS5283-■BD■■-4PA3**	870
60/90	**315 S**	*DNGW-315SL-64*	**1PS5311-■BD■■-4PA3**	1020
70/100	**315 M**	*DNGW-315ML-64* [1]	**1PS5313-■BD■■-4PA3**	1020
80/115	**315 M**	*DNGW-315MN-64*	**1PS5315-■BD■■-4PA3**	1190
100/140	**315 L**	*DNGW-315LL-64* [1]	**1PS5316-■BD■■-4PA3**	1430
125/180	**315 L**	*DNGW-315LM-64* [1]	**1PS5317-■BD■■-4PA3**	1550

LOHER VARIO on request

Operating modes	Frame size				Order code
Mains-fed operation	90 ... 315	**0**			–
Converter-fed operation, standard insulation	90 ... 315	**1**			–
Voltages	Frame size				Order code
230 V, 50 Hz	90 ... 112		**1**		–
500 VY, 50 Hz	90 ... 315		**3**		–
400 V, 50 Hz	90 ... 315		**6**		–
690 VY, 50 Hz	90 ... 315		**8**		–
For other voltages see Page 2/54	90 ... 315		**9**		...
Types of construction	Frame size				Order code
IM B3	90 ... 315			**0**	–
IM B5	90 ... 315			**1**	–
IM B34	90 ... 112			**2**	–
IM B14	90 ... 112			**3**	–
IM V1/cover	90 ... 315			**4**	–
IM B35	90 ... 315			**6**	–
For other types of construction see from Page 1/28	90 ... 315			**9**	...

[1] Rated output, partial utilization up to 155 °C (F).

2

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for constant load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
8-/6-pole: 750/1000 min at 50 Hz with two separate windings				
LOHER CHEMSTAR				
0.45/0.6	**90 L**	*DNGW-090LS-86*	**1PS5098-■BD■■-4RA3**	37
0.6/0.8	**100 L**	*DNGW-100LR-86*	**1PS5106-■BD■■-4RA3**	53
0.7/0.9	**100 L**	*DNGW-100LS-86*	**1PS5108-■BD■■-4RA3**	55
0.9/1.4	**112 M**	*DNGW-112MS-86*	**1PS5113-■BD■■-4RA3**	66
1.5/2	**132 S**	*DNGW-132SR-86*	**1PS5131-■BD■■-4RA3**	93
2.2/3	**132 M**	*DNGW-132MR-86*	**1PS5133-■BD■■-4RA3**	102
4/5.5	**160 M**	*DNGW-160MR-86*	**1PS5163-■BD■■-4RA3**	176
5.5/7.5	**160 L**	*DNGW-160LS-86*	**1PS5166-■BD■■-4RA3**	192
8.5/11	**180 L**	*DNGW-180LS-86*	**1PS5186-■BD■■-4RA3**	255
14.5/19	**200 L**	*DNGW-200LR-86* [1]	**1PS5206-■BD■■-4RA3**	333
16/21	**225 S**	*DNGW-225SR-86*	**1PS5220-■BD■■-4RA3**	395
19/25	**225 M**	*DNGW-225MS-86*	**1PS5223-■BD■■-4RA3**	445
24/32	**250 M**	*DNGW-250MM-86*	**1PS5253-■BD■■-4RA3**	560
33/44	**280 S**	*DNGW-280SL-86*	**1PS5280-■BD■■-4RA3**	780
40/53	**280 M**	*DNGW-280MM-86*	**1PS5283-■BD■■-4RA3**	850
50/65	**315 S**	*DNGW-315SL-86* [1]	**1PS5311-■BD■■-4RA3**	1010
60/80	**315 M**	*DNGW-315ML-86* [1]	**1PS5313-■BD■■-4RA3**	1170
70/95	**315 M**	*DNGW-315MN-86* [1]	**1PS5315-■BD■■-4RA3**	1240
80/110	**315 L**	*DNGW-315LL-86* [1]	**1PS5316-■BD■■-4RA3**	1400
115/150	**315 L**	*DNGW-315LM-86* [1]	**1PS5317-■BD■■-4RA3**	1550

LOHER VARIO on request

Operating modes	Frame size				Order code
Mains-fed operation	90 ... 315	**0**			–
Converter-fed operation, standard insulation	90 ... 315	**1**			–
Voltages	Frame size				Order code
230 V, 50 Hz	90 ... 112		**1**		–
500 VY, 50 Hz	90 ... 315		**3**		–
400 V, 50 Hz	90 ... 315		**6**		–
690 VY, 50 Hz	90 ... 315		**8**		–
For other voltages see Page 2/54	90 ... 315		**9**		...
Types of construction	Frame size				Order code
IM B3	90 ... 315			**0**	–
IM B5	90 ... 315			**1**	–
IM B34	90 ... 112			**2**	–
IM B14	90 ... 112			**3**	–
IM V1/cover	90 ... 315			**4**	–
IM B35	90 ... 315			**6**	–
For other types of construction see from Page 1/28	90 ... 315			**9**	...

[1] Rated output, partial utilization up to 155 °C (F).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for square-law load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
4-/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit for fan drive				
LOHER CHEMSTAR				
0.22/1.1	**80 B**	*DVGW-080BS-42*	**1PS5081-■ND■■-4NA3**	28
0.5/2	**90 L**	*DVGW-090LS-42*	**1PS5098-■ND■■-4NA3**	37
0.65/2.4	**100 L**	*DVGW-100LR-42*	**1PS5106-■ND■■-4NA3**	53
0.8/3	**100 L**	*DVGW-100LS-42*	**1PS5108-■ND■■-4NA3**	55
1.1/4.1	**112 M**	*DVGW-112MS-42*	**1PS5113-■ND■■-4NA3**	66
1.6/6	**132 S**	*DVGW-132SR-42*	**1PS5131-■ND■■-4NA3**	93
2.2/9	**132 M**	*DVGW-132MR-42*	**1PS5133-■ND■■-4NA3**	102
3/12	**160 M**	*DVGW-160MR-42*	**1PS5163-■ND■■-4NA3**	176
4/16	**160 L**	*DVGW-160LS-42*	**1PS5166-■ND■■-4NA3**	192
5.5/20	**180 M**	*DVGW-180MR-42*	**1PS5183-■ND■■-4NA3**	246
6.3/25	**180 L**	*DVGW-180LS-42* [1]	**1PS5186-■ND■■-4NA3**	255
8.5/33	**200 L**	*DVGW-200LS-42*	**1PS5206-■ND■■-4NA3**	333
10.5/38	**225 S**	*DVGW-225SR-42*	**1PS5220-■ND■■-4NA3**	415
13/46	**225 M**	*DVGW-225MS-42*	**1PS5223-■ND■■-4NA3**	420
15/55	**250 M**	*DVGW-250MM-42*	**1PS5253-■ND■■-4NA3**	540
20/75	**280 S**	*DVGW-280SL-42*	**1PS5280-■ND■■-4NA3**	775
24/90	**280 M**	*DVGW-280MM-42*	**1PS5283-■ND■■-4NA3**	830
27/110	**315 S**	*DVGW-315SL-42*	**1PS5311-■ND■■-4NA3**	1020
33/132	**315 M**	*DVGW-315ML-42*	**1PS5313-■ND■■-4NA3**	1120
37/145	**315 M**	*DVGW-315MN-42*	**1PS5315-■ND■■-4NA3**	1190
44/172	**315 L**	*DVGW-315LL-42*	**1PS5316-■ND■■-4NA3**	1430
50/200	**315 L**	*DVGW-315LM-42*	**1PS5317-■ND■■-4NA3**	1520

LOHER VARIO on request

Operating modes	Frame size				Order code
Mains-fed operation	80 ... 315	**0**			–
Converter-fed operation, standard insulation	80 ... 315	**1**			–
Voltages	Frame size				Order code
230 V, 50 Hz	80 ... 112		**1**		–
500 VY, 50 Hz	80 ... 315		**3**		–
400 V, 50 Hz	80 ... 315		**6**		–
690 VY, 50 Hz	80 ... 315		**8**		–
For other voltages see Page 2/54	80 ... 315		**9**		...
Types of construction	Frame size				Order code
IM B3	80 ... 315			**0**	–
IM B5	80 ... 315			**1**	–
IM B34	80 ... 112			**2**	–
IM B14	80 ... 112			**3**	–
IM V1/cover	80 ... 315			**4**	–
IM B35	80 ... 315			**6**	–
For other types of construction see from Page 1/28	80 ... 315			**9**	...

[1] Rated output, partial utilization up to 155 °C (F).

2

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for square-law load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
8-/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit for fan drive				
LOHER CHEMSTAR				
0.12/0.7	**80 B**	*DVGW-080BS-84* [1]	**1PS5081-■ND■■-4QA3**	28
0.35/1.3	**90 L**	*DVGW-090LS-84*	**1PS5098-■ND■■-4QA3**	37
0.45/2	**100 L**	*DVGW-100LR-84*	**1PS5106-■ND■■-4QA3**	53
0.55/2.5	**100 L**	*DVGW-100LS-84*	**1PS5108-■ND■■-4QA3**	55
0.9/3.7	**112 M**	*DVGW-112MS-84*	**1PS5113-■ND■■-4QA3**	66
1.3/5	**132 S**	*DVGW-132SR-84*	**1PS5131-■ND■■-4QA3**	93
1.7/6.8	**132 M**	*DVGW-132MR-84*	**1PS5133-■ND■■-4QA3**	102
3/10	**160 M**	*DVGW-160MR-84*	**1PS5163-■ND■■-4QA3**	176
3.5/13	**160 L**	*DVGW-160LS-84*	**1PS5166-■ND■■-4QA3**	192
4/16	**180 M**	*DVGW-180MR-84*	**1PS5183-■ND■■-4QA3**	246
5/20	**180 L**	*DVGW-180LS-84*	**1PS5186-■ND■■-4QA3**	255
7/28	**200 L**	*DVGW-200LR-84*	**1PS5206-■ND■■-4QA3**	333
8/33	**225 S**	*DVGW-225SR-84*	**1PS5220-■ND■■-4QA3**	405
9.5/39	**225 M**	*DVGW-225MS-84* [1]	**1PS5223-■ND■■-4QA3**	445
11/49	**250 M**	*DVGW-250MM-84*	**1PS5253-■ND■■-4QA3**	560
17/68	**280 S**	*DVGW-280SL-84*	**1PS5280-■ND■■-4QA3**	780
20/80	**280 M**	*DVGW-280MM-84*	**1PS5283-■ND■■-4QA3**	850
22/95	**315 S**	*DVGW-315SL-84*	**1PS5311-■ND■■-4QA3**	1030
26/110	**315 M**	*DVGW-315ML-84*	**1PS5313-■ND■■-4QA3**	1120
30/130	**315 M**	*DVGW-315MN-84*	**1PS5315-■ND■■-4QA3**	1190
38/160	**315 L**	*DVGW-315LL-84*	**1PS5316-■ND■■-4QA3**	1450
45/180	**315 L**	*DVGW-315LM-84*	**1PS5317-■ND■■-4QA3**	1520

LOHER VARIO on request

Operating modes	Frame size					Order code
Mains-fed operation	80 ... 315	**0**				–
Converter-fed operation, standard insulation	80 ... 315	**1**				–
Voltages	Frame size					Order code
230 V, 50 Hz	80 ... 112		**1**			–
500 VY, 50 Hz	80 ... 315		**3**			–
400 V, 50 Hz	80 ... 315		**6**			–
690 VY, 50 Hz	80 ... 315		**8**			–
For other voltages see Page 2/54	80 ... 315		**9**			...
Types of construction	Frame size					Order code
IM B3	80 ... 315			**0**		–
IM B5	80 ... 315			**1**		–
IM B34	80 ... 112			**2**		–
IM B14	80 ... 112			**3**		–
IM V1/cover	80 ... 315			**4**		–
IM B35	80 ... 315			**6**		–
For other types of construction see from Page 1/28	80 ... 315			**9**		...

[1] Rated output, partial utilization up to 155 °C (F).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for square-law load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
6-/4-pole: 1000/1500 rpm at 50 Hz with two separate windings for fan drive				
LOHER CHEMSTAR				
0.4/1.3	**90 L**	*DVGW-090LS-64*	**1PS5098-■ND■■-4PA3**	37
0.6/1.8	**100 L**	*DVGW-100LR-64*	**1PS5106-■ND■■-4PA3**	53
0.75/2.4	**100 L**	*DVGW-100LS-64*	**1PS5108-■ND■■-4PA3**	55
0.9/3	**112 M**	*DVGW-112MS-64*	**1PS5113-■ND■■-4PA3**	66
1.25/4.2	**132 S**	*DVGW-132SR-64*	**1PS5131-■ND■■-4PA3**	93
1.65/5.5	**132 M**	*DVGW-132MR-64*	**1PS5133-■ND■■-4PA3**	102
2.2/7.5	**160 M**	*DVGW-160MR-64*	**1PS5163-■ND■■-4PA3**	176
3/9	**160 M**	*DVGW-160MS-64*	**1PS5165-■ND■■-4PA3**	176
3.5/12	**160 L**	*DVGW-160LS-64*	**1PS5166-■ND■■-4PA3**	192
4.5/14	**180 M**	*DVGW-180MR-64*	**1PS5183-■ND■■-4PA3**	246
5.5/16.5	**180 L**	*DVGW-180LS-64*	**1PS5186-■ND■■-4PA3**	255
7/20	**200 L**	*DVGW-200LR-64*	**1PS5206-■ND■■-4PA3**	333
9/26	**200 L**	*DVGW-200LS-64*	**1PS5208-■ND■■-4PA3**	349
10/31	**225 S**	*DVGW-225SR-64*	**1PS5220-■ND■■-4PA3**	395
13/38	**225 M**	*DVGW-225MS-64*	**1PS5223-■ND■■-4PA3**	445
17/48	**250 M**	*DVGW-250MM-64*	**1PS5253-■ND■■-4PA3**	560
25/70	**280 S**	*DVGW-280SL-64*	**1PS5280-■ND■■-4PA3**	820
30/82	**280 M**	*DVGW-280MM-64*	**1PS5283-■ND■■-4PA3**	870
32/95	**315 S**	*DVGW-315SL-64*	**1PS5311-■ND■■-4PA3**	1030
37/115	**315 M**	*DVGW-315ML-64*	**1PS5313-■ND■■-4PA3**	1120
47/135	**315 M**	*DVGW-315MN-64*	**1PS5315-■ND■■-4PA3**	1190
55/160	**315 L**	*DVGW-315LL-64* [1]	**1PS5316-■ND■■-4PA3**	1430
75/200	**315 L**	*DVGW-315LM-64* [1]	**1PS5317-■ND■■-4PA3**	1520

LOHER VARIO on request

Operating modes	Frame size				Order code
Mains-fed operation	90 ... 315	**0**			–
Converter-fed operation, standard insulation	90 ... 315	**1**			–
Voltages	Frame size				Order code
230 V, 50 Hz	90 ... 112		**1**		–
500 VY, 50 Hz	90 ... 315		**3**		–
400 V, 50 Hz	90 ... 315		**6**		–
690 VY, 50 Hz	90 ... 315		**8**		–
For other voltages see Page 2/54	90 ... 315		**9**		...
Types of construction	Frame size				Order code
IM B3	90 ... 315			**0**	–
IM B5	90 ... 315			**1**	–
IM B34	90 ... 112			**2**	–
IM B14	90 ... 112			**3**	–
IM V1/cover	90 ... 315			**4**	–
IM B35	90 ... 315			**6**	–
For other types of construction see from Page 1/28	90 ... 315			**9**	...

[1] Rated output, partial utilization up to 155 °C (F).

2

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Motor type	Article No.	$m_{IM\ B3}$
kW	FS			kg
• Cooling: self-ventilated (IC 411) • Mains-fed operation: double pole-changing for square-law load torque • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb				
8-/6-pole: 750/1000 rpm at 50 Hz with two separate windings for fan drive				
LOHER CHEMSTAR				
0.32/0.75	**90 L**	*DVGW-090LS-86*	**1PS5098-■ND■■-4RA3**	37
0.45/1	**100 L**	*DVGW-100LR-86*	**1PS5106-■ND■■-4RA3**	53
0.55/1.3	**100 L**	*DVGW-100LS-86*	**1PS5108-■ND■■-4RA3**	55
0.8/1.9	**112 M**	*DVGW-112MS-86*	**1PS5113-■ND■■-4RA3**	66
1.1/2.6	**132 S**	*DVGW-132SR-86*	**1PS5131-■ND■■-4RA3**	93
1.6/3.8	**132 M**	*DVGW-132MR-86*	**1PS5133-■ND■■-4RA3**	102
2.5/6	**160 M**	*DVGW-160MR-86*	**1PS5163-■ND■■-4RA3**	176
3.5/8	**160 L**	*DVGW-160LR-86*	**1PS5166-■ND■■-4RA3**	192
5.5/12.5	**180 L**	*DVGW-180LS-86*	**1PS5186-■ND■■-4RA3**	255
9.5/20	**200 L**	*DVGW-200LS-86*	**1PS5206-■ND■■-4RA3**	333
11/24	**225 S**	*DVGW-225SS-86*	**1PS5220-■ND■■-4RA3**	395
13/28	**225 M**	*DVGW-225MS-86*	**1PS5223-■ND■■-4RA3**	445
16/34	**250 M**	*DVGW-250MM-86*	**1PS5253-■ND■■-4RA3**	560
25/50	**280 S**	*DVGW-280SL-86*	**1PS5280-■ND■■-4RA3**	780
30/60	**280 M**	*DVGW-280MM-86*	**1PS5283-■ND■■-4RA3**	850
33/70	**315 S**	*DVGW-315SL-86*	**1PS5311-■ND■■-4RA3**	1010
40/85	**315 M**	*DVGW-315ML-86*	**1PS5313-■ND■■-4RA3**	1090
47/100	**315 M**	*DVGW-315MN-86*	**1PS5315-■ND■■-4RA3**	1180
55/120	**315 L**	*DVGW-315LL-86*	**1PS5316-■ND■■-4RA3**	1390
70/150	**315 L**	*DVGW-315LM-86* [1]	**1PS5317-■ND■■-4RA3**	1550
LOHER VARIO on request				

Operating modes	Frame size					Order code
Mains-fed operation	90 ... 315	**0**				–
Converter-fed operation, standard insulation	90 ... 315	**1**				–
Voltages	Frame size					Order code
230 V, 50 Hz	90 ... 112		**1**			–
500 VY, 50 Hz	90 ... 315		**3**			–
400 V, 50 Hz	90 ... 315		**6**			–
690 VY, 50 Hz	90 ... 315		**8**			–
For other voltages see Page 2/54	90 ... 315		**9**			...
Types of construction	Frame size					Order code
IM B3	90 ... 315			**0**		–
IM B5	90 ... 315			**1**		–
IM B34	90 ... 112			**2**		–
IM B14	90 ... 112			**3**		–
IM V1/cover	90 ... 315			**4**		–
IM B35	90 ... 315			**6**		–
For other types of construction see from Page 1/28	90 ... 315			**9**		...

[1] Rated output, partial utilization up to 155 °C (F).

Selection and ordering data (continued)

P_{rated}, 50 Hz	Frame size	Operating values at rated output: n_{rated}, 50 Hz	T_{rated}, 50 Hz	T_B	$c/h \cdot J$ S4-40 % 1)	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	$\cos\varphi$ rated, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	I_{rated}, 50 Hz, 500 V	I_{rated}, 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	Motor type	Article No.	m IM B3	J
kW	FS	rpm	Nm	Nm	–	–	%	%	–	A	A	A	–	–	–			kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency: High Efficiency IE2, 0.75 kW and above in accordance with IEC 60034-30 • Insulation: thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B), S1-100 % • Type of protection: "Explosion-proof enclosure" according to EN 60079-1; 2007: CE 0102 II 2G Ex d(e) IIC T4 Gb																			
4-pole: 1500 rpm at 50 Hz																			
LOHER CHEMSTAR																			
0.75	**80 B**	1455	4.9	10	2.2	IE2	81.3	81.5	0.77	1.73	1.34	0.97	1.7	6.0	2.5	*DBGW-080BS-04*	**1PS5081-■RD■■-4BA3**	33	0.0030
1.1	**90 L**	1460	7.2	10	2.0	IE2	86.4	87.1	0.83	2.20	1.73	1.25	2.0	6.8	2.8	*DBGW-090LR-04*	**1PS5095-■RD■■-4BA3**	42	0.0044
1.5	**90 L**	1460	9.8	20	3.0	IE2	85.6	85.7	0.79	3.20	2.50	1.80	2.0	6.7	2.8	*DBGW-090LS-04*	**1PS5098-■RD■■-4BA3**	45	0.0044
2.2	**100 L**	1450	14.4	20	6.25	IE2	86.9	87.9	0.85	4.30	3.50	2.55	1.6	6.4	2.5	*DBGW-100LR-04*	**1PS5106-■RD■■-4BA3**	64	0.0060
3.0	**100 L**	1455	19.7	50	7.5	IE2	85.6	85.8	0.79	6.40	5.00	3.65	2.0	6.3	2.7	*DBGW-100LS-04*	**1PS5108-■RD■■-4BA3**	66	0.0071
4.0	**112 M**	1460	26	50	7.5	IE2	88.3	89.1	0.83	7.90	6.20	4.50	1.9	6.8	2.5	*DBGW-112MS-04*	**1PS5113-■RD■■-4BA3**	80	0.0126
5.5	**132 S**	1455	36.2	50	10.0	IE2	89.5	89.9	0.85	10.4	8.40	6.10	2.6	7.9	2.7	*DBGW-132SR-04*	**1PS5131-■RD■■-4BA3**	110	0.030
7.5	**132 M**	1470	48.7	100	12.5	IE2	90.2	90.7	0.84	14.5	11.4	8.30	2.0	7.6	2.8	*DBGW-132MS-04*	**1PS5133-■RD■■-4BA3**	115	0.030
11	**160 M**	1465	72	100	15.0	IE2	90.5	91.4	0.84	21.0	16.7	12.1	2.8	6.5	2.7	*DBGW-160MR-04*	**1PS5163-■RD■■-4BA3**	176	0.10
15	**160 L**	1470	97	150	12.5	IE2	91.4	92.3	0.84	28.0	22.5	16.3	3.0	6.5	2.7	*DBGW-160LS-04*	**1PS5166-■RD■■-4BA3**	192	0.13
18.5	**180 M**	1475	120	150	20.0	IE2	92.3	92.8	0.84	34.5	27.5	20.0	1.8	7.5	2.5	*DBGW-180MR-04*	**1PS5183-■RD■■-4BA3**	246	0.20
22	**180 L**	1477	142	270	22.5	IE2	92.5	93.0	0.85	40.5	32.5	23.5	1.8	7.5	2.5	*DBGW-180LS-04*	**1PS5186-■RD■■-4BA3**	255	0.23
30	**200 L**	1470	195	270	24.0	IE2	92.3	93.2	0.83	57.0	45.0	33.0	3.0	7.0	2.8	*DBGW-200LS-04*	**1PS5206-■RD■■-4BA3**	333	0.37
6-pole: 1000 rpm at 50 Hz																			
LOHER CHEMSTAR																			
0.55	**80 B**	900	5.8	10	3.5	1)	73.2	73.4	0.70	1.55	1.24	0.90	2.0	3.5	2.1	*DBGW-080BS-06*	**1PS5081-■RD■■-4CA3**	33	0.0030
0.75	**90 L**	960	7.5	10	3.75	IE2	80	80.4	0.72	1.88	1.50	1.09	1.5	4.5	2.2	*DBGW-090LR-06*	**1PS5095-■RD■■-4CA3**	42	0.0044
1.1	**90 L**	950	11.1	20	6.25	IE2	78.1	77.9	0.72	2.80	2.25	1.64	1.4	4.1	2.0	*DBGW-090LS-06*	**1PS5098-■RD■■-4CA3**	45	0.0044
1.5	**100 L**	955	15	20	8.75	IE2	80.4	79.5	0.68	3.95	3.15	2.30	2.5	5.0	2.7	*DBGW-100LS-06*	**1PS5106-■RD■■-4CA3**	64	0.010
2.2	**112 M**	950	22	50	10.0	IE2	82.7	83.7	0.74	5.20	4.15	3.00	2.0	5.0	2.2	*DBGW-112MS-06*	**1PS5113-■RD■■-4CA3**	80	0.019
3	**132 S**	950	30	50	13.75	IE2	85.4	86.1	0.79	6.40	5.10	3.70	2.3	6.0	2.5	*DBGW-132SR-06*	**1PS5131-■RD■■-4CA3**	110	0.033
4	**132 M**	955	40	50	17.5	IE2	85.7	86.7	0.82	8.20	6.60	4.75	2.3	6.0	2.5	*DBGW-132MR-06*	**1PS5133-■RD■■-4CA3**	115	0.045
5.5	**132 M**	955	55	100	20.0	IE2	86.1	86.3	0.77	12.0	9.60	6.90	2.4	6.0	2.6	*DBGW-132MS-06*	**1PS5135-■RD■■-4CA3**	115	0.045
7.5	**160 M**	965	74	100	27.5	IE2	88.2	88.5	0.80	15.3	12.3	8.90	1.5	6.0	2.4	*DBGW-160MR-06*	**1PS5163-■RD■■-4CA3**	176	0.088
11	**160 L**	970	108	150	42.5	IE2	88.9	89.4	0.78	23.0	18.3	13.3	1.6	6.0	2.6	*DBGW-160LS-06*	**1PS5166-■RD■■-4CA3**	192	0.11
15	**180 L**	980	146	270	35.0	IE2	90.5	91.2	0.82	29.0	23.5	16.9	2.1	6.5	2.5	*DBGW-180LS-06*	**1PS5186-■RD■■-4CA3**	255	0.28
18.5	**200 L**	980	180	270	65.0	IE2	91.2	91.5	0.80	36.5	29.5	21.0	2.5	7.0	2.6	*DBGW-200LR-06*	**1PS5206-■RD■■-4CA3**	333	0.45
22	**200 L**	980	214	270	65.0	IE2	91.5	92.0	0.78	44.5	35.5	26.0	2.5	7.0	2.6	*DBGW-200LS-06*	**1PS5208-■RD■■-4CA3**	349	0.49

Operating modes	Frame size		Order code
Mains-fed operation	80 ... 200	**0**	–
Converter-fed operation, standard insulation	80 ... 200	**1**	–
Converter-fed operation with special insulation (derating approx. 5 %)	160 ... 200	**2**	–

Voltages	Frame size		Order code
230 V/400 V, 50 Hz	80 ... 112	**1**	–
500 VY, 50 Hz	80 ... 200	**3**	–
400 V/690 V, 50 Hz	Standard	**6**	–
690 VY, 50 Hz	80 ... 200	**8**	–
For other voltages see Page 2/54	80 ... 500	**9**	...

Types of construction	Frame size		Order code
IM B3	Standard	**0**	–
IM B5	80 ... 200	**1**	–
IM B34	80 ... 200	**2**	–
IM B14	80 ... 200	**3**	–
IM V1/cover	80 ... 200	**4**	–
IM B35	80 ... 200	**6**	–
For other types of construction see from Page 1/28	80 ... 200	**9**	...

T_B = Braking torque in Nm

The maximum permissible number of starts is limited for all motors to 20 *c/h*. For conditions for a higher number of starts, please inquire.

In the case of a number of starts of > 1 per hour, the brake dimensioning must be checked.

Conversion factor *"c/h · J"* depending on the duty cycle.

Standard brake supply: 230 V, 1-phase AC

Example 1
Motor: 1PS5113-. RB..-4BA0 *(motor type: DBGW-112MB-04)*, S4, 40 %, 120 *c/h*
Required: ΣJ
Solution: $c/h \cdot J = 7.5$ from table
$\Sigma J = 7.5/120 = 0.0625$ kgm²

Example 2
Motor: 1PS5113-. RB..-4BA0 *(motor type: DBGW-112MB-04)*, S4, 40 %
Required: *c/h*
Solution: $\Sigma J = 0.05$ kgm²
$c/h \cdot J = 7.5$
$c/h = 7.5/0.05 = 150$

1) Outside the IE code classification according to IEC 60034-30.

Article No. supplements

Selection and ordering data

Voltages	Voltage code 11. position of the Article No.	Additional identification code with order code and plain text if required	Motor series																
			LOHER CHEMSTAR													**LOHER VARIO**			
1PS4. . . - . . . ■ . -			Frame size																
1PS5. . . - . . . ■ . -			71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Optional voltages																				
690 VΔ, 50 Hz	**0**		–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○
230 VΔ/400 VY, 50 Hz	**1**		○	○	○	○	○	○	○	○	○	○	○	○	–	–	–	–	–	–
500 VY, 50 Hz	**3**		○	○	○	○	○	○	○	○	○	○	○	○	○	–	–	–	–	–
400 VΔ, 50 Hz	**4**		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	–
500 VΔ, 50 Hz	**5**		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ/690 VY, 50 Hz	**6**		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	–
690 VY, 50 Hz	**8**		○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	–	–	–
415 VY, 50 Hz	**9**	**L1C**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
415 VΔ, 50 Hz	**9**	**L1D**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–
380 VΔ/660 VY, 50 Hz	**9**	**L1L**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
220 VΔ/380 VY, 50 Hz	**9**	**L1R**	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	–	–	–	–	–	–
1000 VΔ, 50 Hz	**9**	**L1V**	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.	O.R.	O.R.	O.R.
Other voltages	**9**	**L1Y •** and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY, 60 Hz (50 Hz output)	**9**	**L2A**	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	–	–	–	–	–	–
220 VΔ/380 VY, 60 Hz (60 Hz output)	**9**	**L2B**	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	–	–	–	–	–	–
380 VΔ/660 VY, 60 Hz (50 Hz output)	**9**	**L2C**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–
380 VΔ/660 VY, 60 Hz (60 Hz output)	**9**	**L2D**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	–	–	–	–
460 VY, 60 Hz (60 Hz output)	**9**	**L2E**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
460 VΔ, 60 Hz (60 Hz output)	**9**	**L2F**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.
575 VY, 60 Hz (60 Hz output)	**9**	**L2L**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
575 VΔ, 60 Hz (60 Hz output)	**9**	**L2M**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.
440 VY, 60 Hz (50 Hz output)	**9**	**L2Q**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
440 VΔ, 60 Hz (50 Hz output)	**9**	**L2R**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.
460 VY, 60 Hz (50 Hz output)	**9**	**L2S**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
460 VΔ, 60 Hz (50 Hz output)	**9**	**L2T**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
575 VY, 60 Hz (50 Hz output)	**9**	**L2U**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
575 VΔ, 60 Hz (50 Hz output)	**9**	**L2V**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.
440 VY, 60 Hz (60 Hz output)	**9**	**L2W**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	–	–
440 VΔ, 60 Hz (60 Hz output)	**9**	**L2X**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.

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

For dual voltages 230 V/400 V, 220 V/380 V, 400 V/690 V or 380 V/660 V:
– For motors for converter-fed operation, the converter rating plate is stamped with 380 V or 400 V.
– For motors with a Dahlander circuit, the lower voltage is generally specified.

Voltages not listed in the catalog are only available on request.
Standard brake supply voltage: 230 V, 1-phase AC

Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																		
		LOHER CHEMSTAR																**LOHER VARIO**			
1PS4. . . - . . . . . - . . . . -Z		Frame size																			
1PS5. . . - . . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special electrical designs/winding protection																				
Design with reduced starting current – factory clarification required and maybe type test needed, ETO option (Engineer To Order) without order code	–	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.	O.R.	O.R.	O.R.
Special design according to load curve of driven machine or customer requirements – factory clarification required and maybe type test needed, ETO option without order code	–	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.	O.R.	O.R.	O.R.
Adjustment of rating in response to customer requirements – factory clarification required and maybe type test needed, ETO option without order code	–	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.	O.R.	O.R.	O.R.
Motor protection with 3 PTC thermistors for tripping – without surge arresters, sole protection not included	**A11**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with 2 × 3 PTC thermistors for prewarning/tripping – without surge arresters, sole protection not included	**A12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with 3 PTC thermistors for tripping as sole protection on converter (TMS)	**A15**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with 2 × 3 PTC thermistors for prewarning/tripping as sole protection on converter (TMS)	**A16**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measuring of winding temperature by means of embedded KTY84-130 temperature sensor	**A23**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measuring of winding temperature by means of 2 × embedded KTY84-130 temperature sensors	**A25**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring of winding temperature using 3 Pt100 resistance thermometers – in 2-wire design	**A60**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Monitoring of winding temperature using 2 × 3 Pt100 resistance thermometers – 2-wire design, for round-wire winding only	**A61**	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓	✓	✓	✓
3 Pt100 resistance thermometers in stator winding, 3-wire connection from auxiliary terminal box	**A63**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
6 Pt100 resistance thermometers in stator winding, 3-wire connection from auxiliary terminal box	**A64**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
6 Pt100 slot resistance thermometers without surge arresters for 4-wire connection from terminal box – for pre-formed coil winding only	**A65**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
6 Pt100 slot resistance thermometers with surge arresters for 4-wire connection from terminal box – for pre-formed coil winding only	**A66**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
6 Pt100 slot resistance thermometers in shielded design without surge arresters for 4-wire connection – for pre-formed coil winding only	**A67**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special electrical designs/winding protection (continued)																			
6 Pt100 slot resistance thermometers in shielded design to Ex i with surge arresters for 3- and 4-wire connection from terminal box – for pre-formed coil winding only	**Q40**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
2 Pt100 double resistance thermometers in shielded design (Ex i) for roller bearing or sleeve bearings – 2-wire from element, 4-wire from terminal box	**V80**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Winding Pt100 in 3- or 4-wire type from sensor instead of from terminal (not Ex i Pt100!) – Optionally possible for **A60**, **A61**, **A65**, **A66**	**Q43**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Bearing Pt100 in 3- or 4-wire type from sensor instead of from terminal – optionally possible for **V80**, **A40**, **A42**	**Q44**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
One thermocouple per bearing	**Q49**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Sensor for housing vibration monitoring (preferred brand), with loose cable – for each sensor	**V14**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Sensor for housing vibration monitoring (preferred brand), without terminal box – for each sensor	**V15**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
3 transmitters, 4 to 20 mA for Pt100 winding	**P20**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
1 transmitter with digital display with Ex d or Ex i approval	**V88**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Pt100 winding in tolerance class A with calibration certificate	**V78**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Site altitude max. 1500 m (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site altitude max. 2000 m (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site altitude max. 2500 m (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D08**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																
		LOHER CHEMSTAR														**LOHER VARIO**		
1PS4. . . - . . . . - . . . . -Z		Frame size																
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special electrical designs/winding protection (continued)																			
Site altitude max. 3000 m (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D09**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 45 °C (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D11**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 50 °C (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 55 °C (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D13**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 60 °C (observe derating) – derating in accordance with reduction table, efficiency class of motor is maintained. No additional charge when special voltage is selected (11th position of Article No. = 9).	**D14**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature below +40 °C with increased output – factory clarification required, not applicable for IE2.	**D18**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Utilization to temperature class 155 (F) with higher output – higher output on request, not applicable for IE2. No additional charge when special voltage is selected (11th position of Article No. = 9).	**C12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	✓
Rated output of the lower output level – IEC output levels are maintained, only in combination with **D06** to **D18**. No additional charge when special voltage is selected (11th position of Article No. = 9).	**C29**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Temperature class F	**W00**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Temperature class H	**W01**	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.	–	–	–	–

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special electrical designs/winding protection (continued)																			
Special insulation for increased voltage load in converter-fed operation (phase/phase 2250 V_{Peak}/derating) – for LOHER CHEMSTAR at 8th position of the Article No. = 2	[1]	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sealing of winding overhangs with silicone rubber	**W03**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	O.R.	O.R.	O.R.	O.R.
Sealing of cable duct with silicone rubber	**W04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Efficiency according to efficiency class IE3 (Premium Efficiency) – factory clarification required	**D25**	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.	–	–	–	–
Non-standard voltage and/or frequency for separate fan motor	**Y81** • and identification code	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Other special electrical designs/ configurations		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.	O.R.	O.R.	O.R.
Colors and paint finish																			
Internal corrosion protection system J08	**W10**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Coating system N08 – 110 µm (C3 medium) – corrosion resistance acc. to EN/ISO 12944-5 = C3	**V09**	□	□	□	□	□	□	□	□	□	□	□	□	□	□	○	○	○	○
Coating system N14/J08 – 170 µm (chemical industry + onshore, C5 industrial climate) – corrosion resistance acc. to EN/ISO 12944-5 = C5 (5 to 15 years) for industrial climate	**V10**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coating system N14A (chemical industry + onshore, C5 industry) – corrosion resistance acc. to EN/ISO 12944-5 = C5 (5 to 15 years) for industrial climate	**W14**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Special prime coat system Z05 with internal corrosion protection system J08	**W15**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Coating system Z21/J08 – 210 µm (offshore, C5M-M) – corrosion resistance acc. to EN/ISO 12944-5 = C5 (5 to 15 years) – sea climate	**V11**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased layer thickness 275 µm for coating system Z21 (C5M-high) – only in combination with **V11** – corrosion resistance acc. to EN/ISO 12944-5 = C5 high (> 15 years) – sea climate	**V19**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special offshore paint finish S13 with reference to NORSOK M501 (C5M-high) with comments and deviations – corrosion resistance acc. to EN/ISO 12944-5 = C5 high (> 15 years) – sea climate	**V12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special coating system S11/J08 (e.g. submerged motors)	**V13**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unpainted, only primed	**K24**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Unpainted	**K23**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	–	–	–
Outer coating 110 µm for zinc-galvanized noise cabinet	**V98**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Special colors according to Munsell or British Standard	**Y50** • and identification code	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Colors and paint finish (continued)																			
Standard paint finish in RAL 1004, 1018, 2000, 2004, 5009, 5012, 5015, 6003, 6011, 7000, 7011, 7031, 7038, 9002	**Y53** • and special finish RAL….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special paint finish in RAL 1004, 1018, 2000, 2004, 5009, 5012, 5015, 6003, 6011, 7000, 7011, 7031, 7038, 9002 (specify special coating system in addition, e.g. **V10**, **V11**, **W14**, etc.)	**Y54** • and special finish RAL….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RAL colors, other than those offered above	**Y51** • and special finish RAL….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special non-RAL colors	**Y71** • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Other paint combinations/systems or RAL colors to customer specification		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.	O.R.	O.R.	O.R.
Design for Zones according to ATEX																			
Design for Zone 21 (conductive dust) for mains-fed operation	**M34**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Design for Zone 22 (non-conductive dust) for mains-fed operation	**M35**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Design for Zone 21 (conductive dust) for converter-fed operation	**M38**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Design for Zone 22 (non-conductive dust) for converter-fed operation	**M39**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Design in double protection additionally for dust, Zone 22 for mains-fed operation, no hybrid certification – non-conductive dust	**W20**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Design in double protection additionally for dust, Zone 21 for mains-fed operation, no hybrid certification – version and certification for conductive dust (incl. non-conductive dust)	**W21**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Design in double protection additionally for dust, Zone 22 for converter-fed operation, no hybrid certification – non-conductive dust, select options for converter-fed operation separately	**W22**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Design in double protection additionally for dust, Zone 21 for converter-fed operation, no hybrid certification – version and certification for conductive dust (incl. non-conductive dust), select options for converter-fed operation separately	**W23**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Ship design "Operation below deck"																			
Design acc. to GL (Germanischer Lloyd), CT 45 °C with manufacturer's declaration – non essential	**W24**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Design acc. to LRoS (Lloyds Register of Shipping), CT 45 °C with manufacturer's declaration – non essential	**W25**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Design acc. to BV (Bureau Veritas), CT 45 °C with manufacturer's declaration – non essential	**W26**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR															**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355		355	400	450	500
Ship design "Operation below deck" (continued)																				
Design acc. to DNV (Det Norske Veritas), CT 45 °C with manufacturer's declaration – non essential	**W27**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.		O.R.	O.R.	O.R.	O.R.
Design acc. to ABS (American Bureau of Shipping), CT 50 °C with manufacturer's declaration – non essential	**W28**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.		O.R.	O.R.	O.R.	O.R.
Design acc. to RINa (Registro Italiano Novale), CT 50 °C with manufacturer's declaration – non essential	**W29**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.		O.R.	O.R.	O.R.	O.R.
Other certifications, motors for upper deck mounting and acceptance tests to classification – factory clarification required	**W99**	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.		–	–	–	–
Design acc. to GL (Germanischer Lloyd), CT 45 °C, essential drive [2]	**Q60**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to LRoS (Lloyds Register of Shipping), CT 45 °C with manufacturer's declaration, essential drive [2]	**Q61**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to BV (Bureau Veritas), CT 45 °C with manufacturer's declaration, essential drive [2]	**Q62**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to DNV (Det Norske Veritas), CT 45 °C with manufacturer's declaration, essential drive [2]	**Q63**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to ABS (American Bureau of Shipping), CT 50 °C with manufacturer's declaration, essential drive [2]	**Q64**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to RINa (Registro Italiano Novale), CT 50 °C with manufacturer's declaration, essential drive [2]	**Q65**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to CCS (China) CT 45 °C with manufacturer's declaration, essential drive [2]	**Q66**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to USSR (Russia) CT xx °C with manufacturer's declaration, essential drive [2]	**Q67**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to PR (Poland) CT xx °C with manufacturer's declaration, essential drive [2]	**Q68**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Design acc. to NKK (Japan) CT xx °C with manufacturer's declaration, essential drive [2]	**Q69**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O.R.	O.R.	O.R.	O.R.
Individual certifications																				
Coolant temperature in temperature range -50 to +40 °C – roller bearing design	**D02**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Coolant temperature in temperature range -40 to +40 °C – roller bearing design	**D03**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Coolant temperature in temperature range -30 to +40 °C – roller bearing design	**D04**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Electrical design according to NEMA MG1-12	**D30**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Certification acc. to NEPSI – design may differ (different cover size)	**D32**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		O.R.	O.R.	O.R.	O.R.
China Energy Efficiency Label	**D34**	○	○	○	○	○	○	○	○	○	○	○	○	○	○		–	–	–	–
Certificate EAC for Eurasian Customs Union	**D35**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		O.R.	O.R.	O.R.	O.R.

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Individual certifications (continued)																			
Ex certification for India (PESO – CCOE)	**D38**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
IEC Ex certificate	**D37**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	O.R.	O.R.	O.R.	O.R.
Special mechanical designs																			
Terminal box on right-hand side (view onto DE)	**K09**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
Terminal box on left-hand side (view onto DE)	**K10**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○
Terminal box on top	**K11**	□	□	□	□	□	□	□	□	□	□	□	□	□	□	○	○	○	○
Terminal box to IP65	**Q71**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Cable entry thread metrically different from standard – thread dimension must be specified	**W30**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Enlarged connection system for main terminal box – not in combination with **K53** (Ex d terminal box)	**L00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Undrilled cable gland plate – for main terminal box	**L01**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○	○
Main terminal box in Ex d version with standard terminals	**Q31**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
1 × NPT thread – specify size in plain text, cable gland not in our supply	**W32**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
1 × cable gland for non-armored cable – for main terminal box	**K54**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
1 × cable gland, standard thread size, for non-armored cable – for additional connection	**W33**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Saddle terminal for connection without cable lug	**W35**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	□	□	□	□
Special cable gland – one cable gland for supply cable in the main terminal box, non-armored cable	**Y97** • and identification code	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.	O.R.	O.R.	O.R.
Cable gland, standard Ex d (non-armored cable) 1 unit – only in combination with **K53**	**W91**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Cable gland for accessories Ex d – 1 unit (non-armored cable) –	**W92**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Explosion-proof main terminal box Ex d IIC – for connection cable of accessories in main or auxiliary terminal box	**K53**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Auxiliary terminal box Ex d IIC, cast-iron – with standard thread according to catalog; specify size if different (**W30**), because cable glands with reduction are only permitted in certain cases	**V43**	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Auxiliary terminal box Ex e, cast-iron – not in combination with **K53** (Ex d terminal box)	**W72**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Material of auxiliary terminal box: Stainless steel – not in combination with **K53** (Ex d terminal box)	**M51**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Separate auxiliary terminal box for anti-condensation heater	**M52**	–	–	–	–	–	–	–	–	–	–	–	–	–	○	✓	✓	✓	✓
Auxiliary terminal box in cast-iron design with "undrilled" removable cable gland plate – not in combination with **K53** (Ex d terminal box)	**Q75**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Auxiliary terminal box in cast-iron design with removable cable gland plate "drilled with metric thread and sealed with metal plug" – not in combination with **K53** (Ex d terminal box)	**Q76**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Cable outlet radially without terminal box with 1 m free cable length (4- or 7-core)	**W38**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Additional price for each additional meter of cable – only in combination with **W38**	**W39**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Connection cable for accessories – only in combination with **W38**, length as power cable	**W40**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Additional separately supplied terminal box made of cast-iron with baseplate – main terminal box certified acc. to Ex e	**W41**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Cable entry from DE	**K83**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Cable entry from NDE	**K84**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rotation of the terminal box by 180°	**K85**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Vibration quantity level A – IEC 60034-14	**K01**	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B – IEC 60034-14 – for converter-fed operation only at lowest and highest speed of speed range	**K02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and flange with increased accuracy according to DIN 42955-R	**K04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Radial sealing ring at DE for horizontal flange-mounting types (oil-tight)	**K17**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	–	–	–	–
Radial sealing ring at DE for vertical flange-mounting types (oil-tight)	**W43**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	–	–	–	–
Labyrinth sealing for external bearing seal	**W44**	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓	✓	□	□	□	□
Bearing for increased cantilever forces (roller bearing DE) with regreasing device – comprising **K40**	**K20**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Bearings for increased axial forces	**V20**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Regreasing device DE/NDE	**K40**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	□	□	□	□	□	□

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																		
		LOHER CHEMSTAR															**LOHER VARIO**			
1PS4. . . - . . . . . - . . . . -Z		Frame size																		
1PS5. . . - . . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355		355	400	450	500
Special mechanical designs (continued)																				
Bearing insulation NDE for roller bearings – binding for frame sizes 315 to 500 for converter-fed operation	**L27**	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓		✓	✓	✓	✓
Shaft grounding device – up to -20 °C only	**V36**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		O. R.	O. R.	O. R.	O. R.
Located bearing DE	**K94**	□	□	□	□	□	□	□	□	□	□	□	□	□	□		□	□	□	□
Located bearing NDE	**L04**	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.		–	–	–	–
Pt100 bearing in tolerance class A with calibration certificate – only in combination with **Q44**	**V76**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Bearing ventilation at DE for lower bearing temperature for roller bearing design grease-lubricated	**V17**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Bearing insulation at both ends for roller bearing design motors (DE linked to ground) – for horizontal mounting only (vertical mounting on request)	**V18**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Grease extractors for DE and NDE	**V21**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–	–	✓
Automatic grease lubricator at DE and NDE (permissible temperature range from -15 to +50 °C)	**V22**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
Enlarged spent grease chamber at DE and NDE	**V25**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓
External grounding (additionally)	**W46**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		–	–	–	–
VIK design – including **W14**, **W69**	**K30**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–		✓	✓	–	–
LOHER CHEMSTAR Plus design, including VIK design – including **K30**, **K51**, **W14**, **W69** and IP66 bearing seal, vibration quantity level as grade B	**W09**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–		–	–	–	–
Second rating plate, supplied loose	**K31**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Second rating plate installed in terminal box	**W47**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Extra rating plate stamped with data for converter-fed operation – data for quadratic torque in speed range 1:10 and constant torque in speed ranges 1:3 and 1:10	**Y80** • and identification code	○	○	○	○	○	○	○	○	○	○	○	○	○	○		–	–	–	–
Extra rating plate for customer data (each plate) – data must be specified as text in the order	**Y82** • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Rating plates made of stainless steel	**W48**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		–	–	–	–
Rating plates in languages other than English or German – main rating plate or extra rating plates O. R. factory clarification required	**W49**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Additional measures for 2 to 4 years storage in accordance with storage regulations	**W50**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Anti-condensation heater 230 V	**K45**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–		✓	✓	✓	✓
Anti-condensation heater 115 V	**K46**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–		✓	✓	✓	✓
Anti-condensation heater, 110 to 120 V (min. 100 V, max. 132 V) – preferred	**M12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Anti-condensation heater, 210 to 250 V (min. 200 V, max. 264 V) – preferred	**M13**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Anti-condensation heater rated voltage range 110 to 120 V (min. 100 V, max. 132 V) Ex e II T3	**M14**	–	–	–	–	–	–	–	–	–	–	–	–	–	–		✓	✓	✓	✓

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Anti-condensation heater rated voltage range 220 to 240 V (min. 200 V, max. 264 V) Ex e II T3	**M15**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Heater in main terminal box	**P84**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Second standard shaft extension – for 100 % torque; VARIO 50 % torque	**K16**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second shaft extension for IM B3 up to 100 % torque; cylindrical with feather key	**Q21**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Non-standard cylindrical shaft extension (standard diameter or smaller) – in case of significantly different diameters, especially high-pole motors due to the maximum permissible torque stress, factory clarification required	**Y55** • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft of material 1.7225	**W51**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Shaft of material 1.4021	**W52**	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	–	–
Shaft end of stainless steel butt-welded (material 1.4571)	**W53**	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	–	–
Shaft made of special steel – for increased torque loading, e.g. 1.7225-42CrMo4	**L72**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Welded standard stator housing for surface-cooled motors – factory clarification required because of possible dimension deviations	**W54**	–	–	–	–	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
Welded copper bar rotors	**W55**	–	–	–	–	–	O. R.	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
Special rotors for heavy duty starting (e.g. double-cage rotor or brass rotor) – testing needed	**Q22**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Generator design (asynchronous) with 1.8 times runaway speed – only 4-pole and higher	**W56**	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	–	–	–	–
IP56 degree of protection	**K51**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
IP65 degree of protection	**K50**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP66 degree of protection	**L94**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.
Increased tropicalization, humidity ≥ 80 % – LOHER CHEMSTAR incl. **V10** and **W71**, LOHER VARIO incl. **V10** and **P45**	**W61**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tropical design for outdoor onshore installation	**L28**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Design without fan and fan cover – motor mounted in air stream. Without external air stream cooling, factory clarification required due to derating	**W62**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.
Fan with plastic coating in case of metal fan	**W63**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fan of aluminum	**W64**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	□	–	–	–	–	–
Fan of steel	**W65**	O. R.	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□	□
External fan of brass	**W66**	O. R.	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External fan of stainless steel	**V94**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR															**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Special ventilation for on-deck motors	**W67**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Fan cover of steel sheet (3 mm thick)	**W68**	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Galvanized fan cover – included in **K30** and **W09**	**W69**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	O.R.	O.R.
Noise class 3 for clockwise direction of rotation viewed onto DE – for 2-pole motors only	**K37**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Noise class 3 for counter-clockwise direction of rotation viewed onto DE – for 2-pole motors only	**K38**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Clockwise – direction of rotation must be specified for motors of FS 355 and above 2-/4-pole	**K97**	–	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○	○	○
Counter-clockwise – direction of rotation must be specified for motors of FS 355 and above 2-/4-pole	**K98**	–	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○	○	○
Noise reduction: Silencer for air inlet (DW, NMA) – only in combination with **K97** or **K98**	**L20**	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓
Stainless steel grid for air inlet silencer – only in combination with **L20**	**L25**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Noise cabinet with inspection door – zinc-galvanized, unpainted – noise reduction approx. 15 dB(A) for GG1	**V32**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Noise cabinet with inspection door – V4A unpainted – noise reduction approx. 15 dB(A) for GG1	**V35**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Operation in both directions of rotation – FS 355 and above 2-/4-pole on request, increased noise values and derating	**K99**	□	□	□	□	□	□	□	□	□	□	□	□	□	○	○	○	○	○
Higher number of starts (up to 3000 starts per year)	**Q23**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Full-key balancing	**L68**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Support ring for coupling guard	**L15**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Fitting of coupling halves (customer-supplied, finish-machined and balanced) – supplied 4 weeks ahead of testing date	**L17**	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.	✓	✓	✓	✓
Motor mounting material: bolts for mounting on steel foundation with shims (V2A), taper pins	**L31**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Motor mounting material: T-head bolts, anchor sleeves and soleplates for mounting on concrete foundation	**L33**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Half-key balancing	**L69**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○	○
Stainless steel screws and plates	**W71**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Stainless steel external bolts	**P45**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Ambient temperatures down to -40 °C; preheating before operation necessary – factory clarification required regarding the heating power required, heating via the winding may be necessary. Installed heating elements in motor at additional charge.	**W73**	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.	O.R.	O.R.	O.R.

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Ambient temperatures down to -40 °C; no preheating before operation	**W97**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Ambient temperatures down to -55 °C; no preheating before operation	**W98**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Mounting of rotary pulse encoder, 1024 pulses per revolution -10 to 30 V, HTL level – explosion-proof version	**W96**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Mounting of rotary pulse encoder Ex version (preferred brand) – 1024 pulses per revolution -10 to 30 V, HTL level – explosion-proof version	**V72**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Mounting of rotary pulse encoder Ex version with integrated shaft grounding (preferred brand) – 1024 pulses per revolution -10 to 30 V, HTL level – explosion-proof version; up to 20 °C; select bearing insulation separately	**V77**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Mechanical protection for rotary pulse encoder – in combination with **V72**, **V77**	**M68**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Mounted axial forced ventilation – forced ventilation should preferably be specified in the 10th position of the Article No.	**G17**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.
Mounted radial forced ventilation	**W81**	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	O.R.	–	–	–	–
Forced ventilation at NDE – for Ex motors – axial forced ventilation	**V28**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Backstop for clockwise direction of rotation viewed onto DE (counter-clockwise blocked) – dimensions may differ	**G48**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Backstop for counter-clockwise direction of rotation viewed onto DE (clockwise blocked)	**G49**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manual mechanical release for standard brake	**K82**	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
Brake supply voltage 400 V AC/50 Hz	**C01**	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
Brake supply voltage 24 V DC	**C00**	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
Tapered shaft extension with shaft nut	**T36**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.
Microswitch for brake – optionally deselectable if monitoring is implemented differently	**W83**	–	□	□	□	□	□	□	□	□	–	–	–	–	–	✓	✓	✓	✓
Sun protection shield – fixing parts of mild steel, cover unpainted stainless steel for vertical motors	**V87**	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓
Sun protection shield – fixing parts of mild steel, cover of unpainted stainless steel for horizontal motors	**V99**	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓
Preparation for SPM bearing monitoring, only M8 drilled hole for measuring nipple	**W84**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Condensation drain valve (drain and breather) for auxiliary terminal box to IP55 – not in combination with **V43** (Ex d terminal box)	**Q77**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Condensation drain valve (drain and breather) for main terminal box – not in combination with **K53** (Ex d terminal box)	**Q78**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Machined surface on motor foot with dowel pin holes	**Q94**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Base frame for height adaptation of max. 2 frame sizes difference	**Q96**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Adaptation of foot and shaft dimensions to next higher frame size (no adaptation of terminal box!)	**Q97**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Adaptation of flange dimensions and drilled holes in flange	**Q98**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Preparation for later installation of sun protection shield	**Q99**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
SPM bearing monitoring: Measuring nipple system 32 – thread M8, DE and NDE	**G50**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shock pulse measurement (SPM), fixed sensor and distribution box	**H05**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
SPM bearing monitoring: Fixed sensor system 40 – thread M8	**W85**	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	–	–	–	–
Bearing temperature monitoring with PTC thermistors at DE/NDE	**W86**	–	–	–	–	–	–	O.R.	O.R.	✓	✓	✓	✓	✓	✓	–	–	–	–
Speed monitoring by inductive proximity switches, Pepperl + Fuchs	**A03**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
2 Pt100 resistance thermometers for 3- or 4-wire connection from terminal box for roller bearings – 1 × DE and 1 × NDE	**A40**	–	–	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓
2 Pt100 double resistance thermometers for 4-wire connection from terminal box for roller bearings – 1 × DE and 1 × NDE	**A42**	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓
2 dial-type thermometers without contacts, capillary principle	**A70**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
2 dial-type thermometers with 2 NO contacts, capillary principle	**A71**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Bearing temperature monitoring with 1 × Pt100 per bearing in 2-wire connection – 2-wire from terminal box	**A72**	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	–	–	–	–
One dial-type thermometer with 2 contacts, capillary principle – Ex i design without supply unit!	**V89**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Engraved tag plate fixed on terminal box	**V96**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
4 mm shims, stainless-steel base (V4A/AISI 316) – not laminated	**Q92**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
4 mm shims, brass base – not laminated	**V31**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓

Special versions

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor series																	
		LOHER CHEMSTAR														**LOHER VARIO**			
1PS4. . . - . . . . - . . . . -Z		Frame size																	
1PS5. . . - . . . . - . . . . -Z		71	80	90	100	112	132	160	180	200	225	250	280	315	355	355	400	450	500
Special mechanical designs (continued)																			
Slotted feet holes	**Q95**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Pre-formed coil for LV motors	**V01**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
2 metal test sheets (100 × 150 mm) with paint layer for special acceptance test	**V08**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Impact protection – for built-on devices, per device	**M81**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
"High-speed motors" for speed range 3600 < n ≤ 6000 rpm – only on request; torque curve and cutoff frequency affect the design; test with original converter may be required	**W87**	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	–	–
"High-speed motors" for speed range > 6000 rpm – only on request; torque curve and cutoff frequency affect the design; test with original converter may be required, ETO option (Engineer To Order) without order code	**–**	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	–	–
Retrofit (description of special design separately) – adaptation to an existing motor	**B15**	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.	O. R.	O. R.	O. R.
Extension of the liability for defects																			
Extension of the liability for defects by 12 months to a total of 24 months from delivery	**Q80**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of the liability for defects by 18 months to a total of 30 months from delivery	**Q81**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of the liability for defects by 24 months to a total of 36 months from delivery	**Q82**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of the liability for defects by 30 months to a total of 42 months from delivery	**Q83**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of the liability for defects by 36 months to a total of 48 months from delivery	**Q84**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of the liability for defects by 48 months to a total of 60 months from delivery	**Q85**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

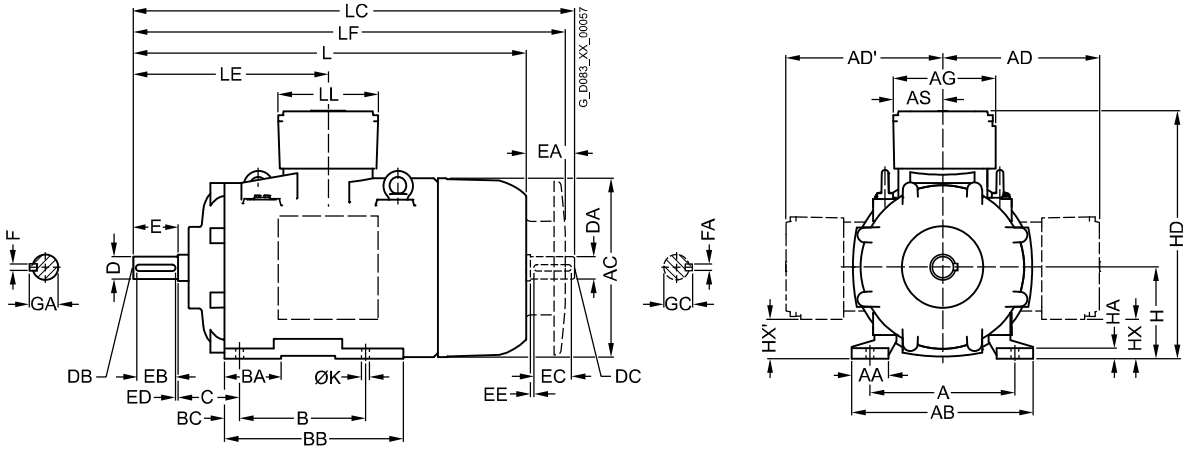
[1] Coding in 8th position of the article number, for LOHER CHEMSTAR = 2.

[2] Acceptance tests must be selected additionally. For example, for the first motor select **F83** or **F93**, and for each additional motor **F01**. Inclusive of costs for certification authority and inspector, and shaft test if specified by certification authority. LOHER CHEMSTAR for essential drive is possible on request as an ETO option (Engineer To Order) without an option code.

Dimensional drawings

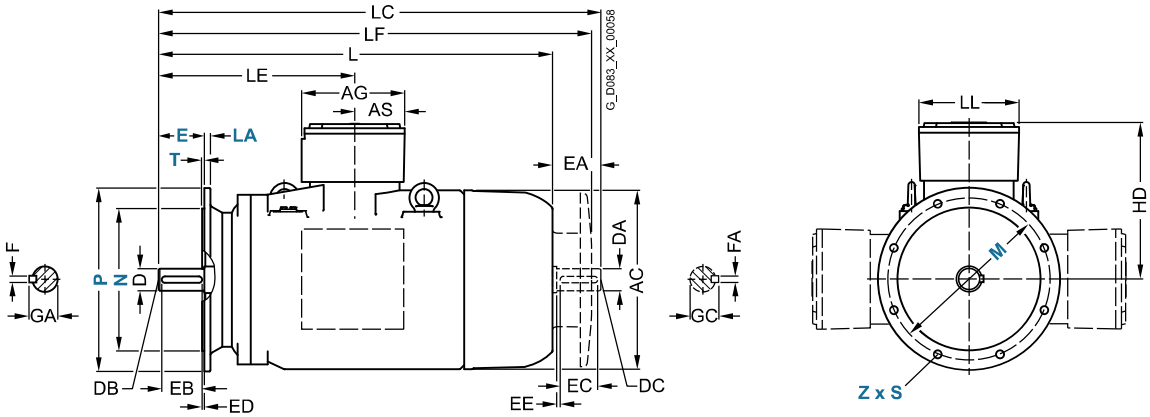
Type of construction IM B3

For flange dimensions, see Page 2/75.



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/75.



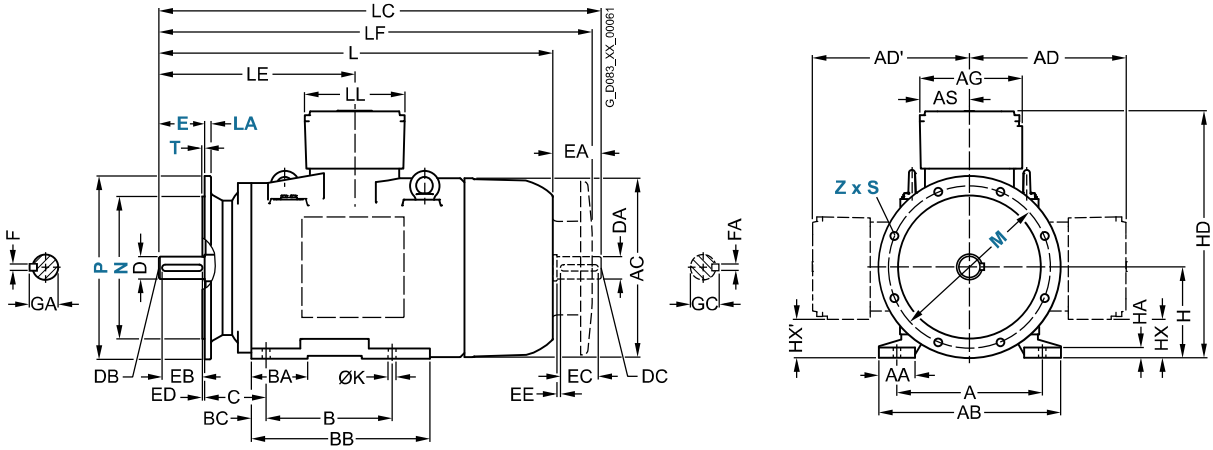
		Dimension designation acc. to **IEC**																	
Frame size	No. of poles	A	AA	AB	AC	AD	AG	AS	B	BA	BB	BC	C	H	HA	HD	øK	L
LOHER CHEMSTAR																		
71 B	2 … 16	112	30	140	148	–	138	69	90	30	125	10	45	71	10	271	7	345
80 B	2 … 16	125	35	160	168	–	138	69	100	35	130	13	50	80	10	289	10	358
90 L	2 … 16	140	40	180	186	–	138	69	125	40	155	15	56	90	13	303	10	426
100 L	2 … 16	160	45	205	213	–	138	69	140	45	170	15	63	100	18	327	12	482
112 M	2 … 16	190	50	240	237	–	138	69	140	60	170	15	70	112	18	352	12	465
132 S	2 … 16	216	50	260	278	274	186	92	140	88	228	25	89	132	18	406	12	574
132 M	2 … 16	216	50	260	278	274	186	92	178	88	228	25	89	132	18	406	12	574
160 M	2 … 16	254	60	310	331	304	186	92	210	61	307	21	108	160	27	465	15	786
160 L	2 … 16	254	60	310	331	304	186	92	254	61	307	21	108	160	27	465	15	786
180 M	2 … 16	279	70	349	363	349	254	123	241	99	359	24	121	180	19	529	15	822
180 L	2 … 16	279	70	349	363	349	254	123	279	99	359	24	121	180	19	529	15	822
200 L	2 … 16	318	80	400	402	367	254	123	305	120	425	32	133	200	25	569	19	884
225 S	2 4 … 16	356	90	446	451	384	254	123	286	136	438	34	149	225	26	609	19	966 996
225 M	2 4 … 16	356	90	446	451	384	254	123	311	136	438	34	149	225	26	609	19	966 996
250 M	2 4 … 16	406	100	505	490	522	382	176	349	110	420	36	168	250	35	772	25	1028

2

Dimensional drawings (continued)

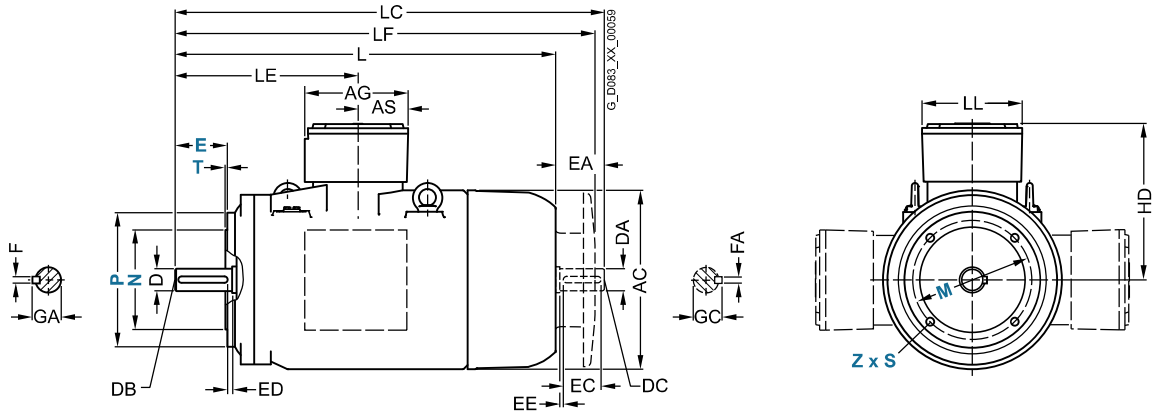
Type of construction IM B35

For flange dimensions, see Page 2/75.



Type of construction IM B14

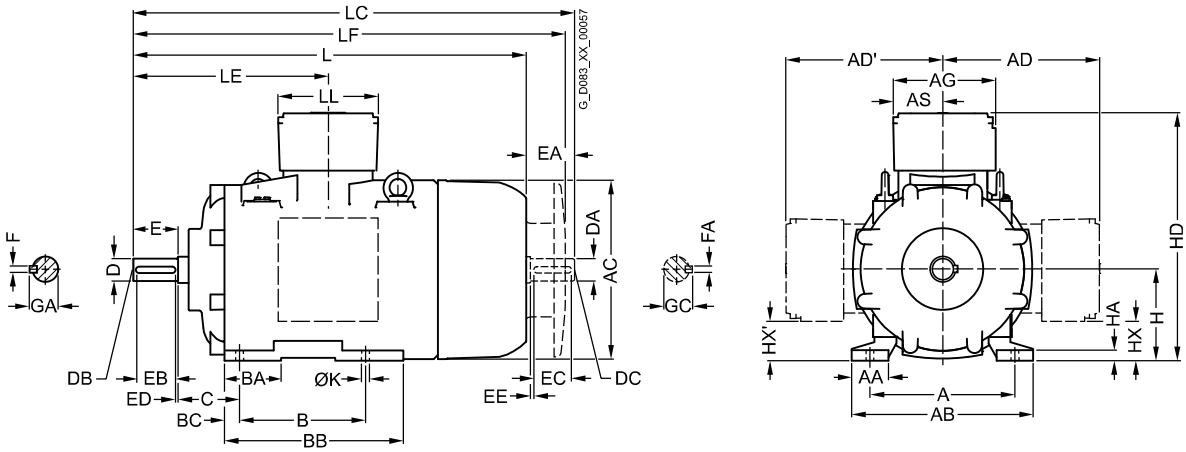
For flange dimensions, see Page 2/75.



		Dimension designation acc. to **IEC**					DE shaft extension						NDE shaft extension						
Frame size	No. of poles	LC	LE	LF	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
LOHER CHEMSTAR																			
71 B	2 … 16	385	135	377	138	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 B	2 … 16	408	158	391	138	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	22
90 L	2 … 16	486	173	459	138	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27
100 L	2 … 16	552	205	520	138	28	M10	60	50	5	8	31	28	M10	60	50	5	8	31
112 M	2 … 16	535	210	505	138	28	M10	60	50	5	8	31	28	M10	60	50	5	8	31
132 S	2 … 16	664	270	638	184	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	2 … 16	664	270	638	184	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	2 … 16	906	381	850	184	42	M16	110	100	5	12	45	42	M16	110	100	5	12	45
160 L	2 … 16	906	381	850	184	42	M16	110	100	5	12	45	42	M16	110	100	5	12	45
180 M	2 … 16	942	415	912	246	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	52
180 L	2 … 16	942	415	912	246	48	M16	110	100	5	14	51.6	48	M16	110	100	5	14	52
200 L	2 … 16	1004	460	974	246	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	2	1086	480	1062	246	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	4 … 16	1146	510	1092		60		140	125	7.5	18	64	60		140	125	7.5	18	64
225 M	2	1086	480	1062	246	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	4 … 16	1146	510	1092		60		140	125	7.5	18	64	60		140	125	7.5	18	64
250 M	2	1178	496	1140	354	60	M20	140	125	7.5	18	64	60	M20	140	125	7.5	18	64
	4 … 16					65						69	65						69

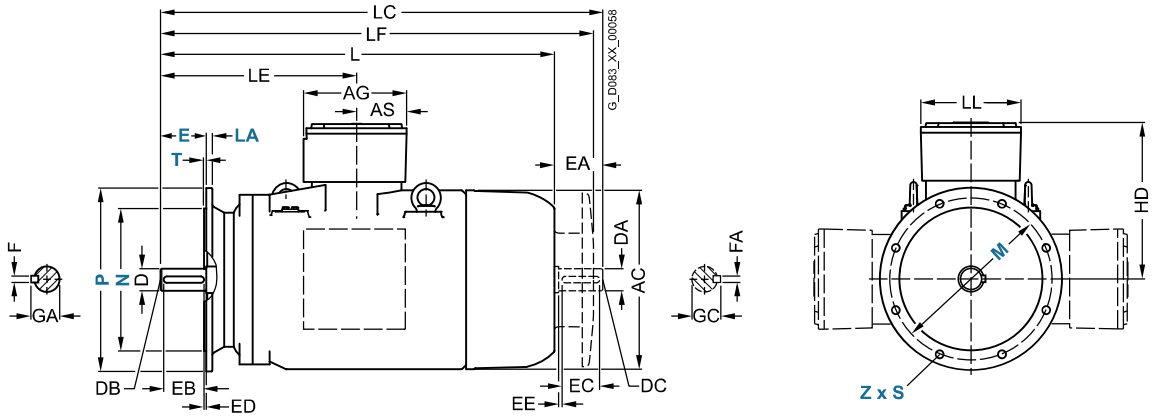
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/75.



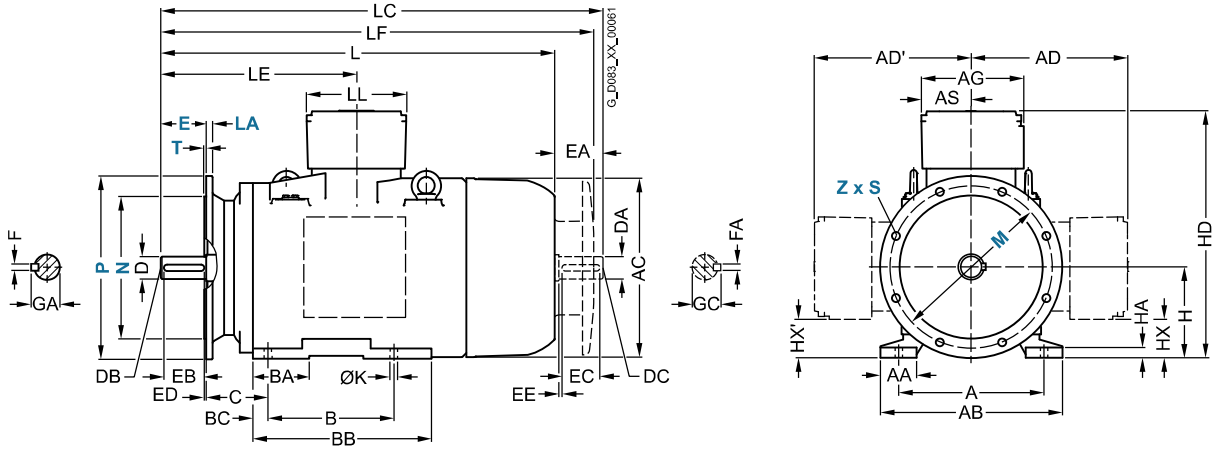
		Dimension designation acc. to **IEC**																	
Frame size	No. of poles	A	AA	AB	AC	AD	AG	AS	B	BA	BB	BC	C	H	HA	HD	øK	L
LOHER CHEMSTAR																		
280 S	2 4 … 16	457	110	570	550	552	382	176	368	150	520	51	190	280	40	832	25	1119
280 M	2 4 … 16	457	110	570	550	552	382	176	419	150	520	51	190	280	40	832	25	1119
315 S	2 4 … 16	508	125	630	622	660	509	196	406	165	575	59	216	315	40	975	28	1304 1334
315 M	2 4 … 16	508	125	630	622	660	509	196	457	165	575	59	216	315	40	975	28	1304 1334
315 LL	2 4 … 16	508	125	630	622	676	509	196	508	165	575	59	216	315	40	991	28	1491 1521
315 L	2 4 … 16	508	125	630	622	676	509	196	560	165	575	59	216	315	40	991	28	1491 1521
355 M	2 4, 6	630	150	780	734	–	509	196	800	220	980	90	254	355	35	1182	35	1781 1840

2

Dimensional drawings (continued)

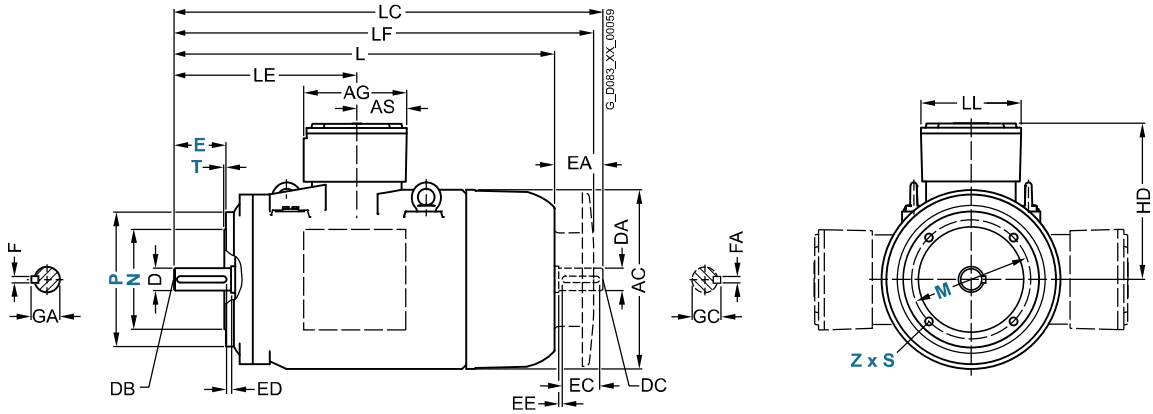
Type of construction IM B35

For flange dimensions, see Page 2/75.



Type of construction IM B14

For flange dimensions, see Page 2/75.

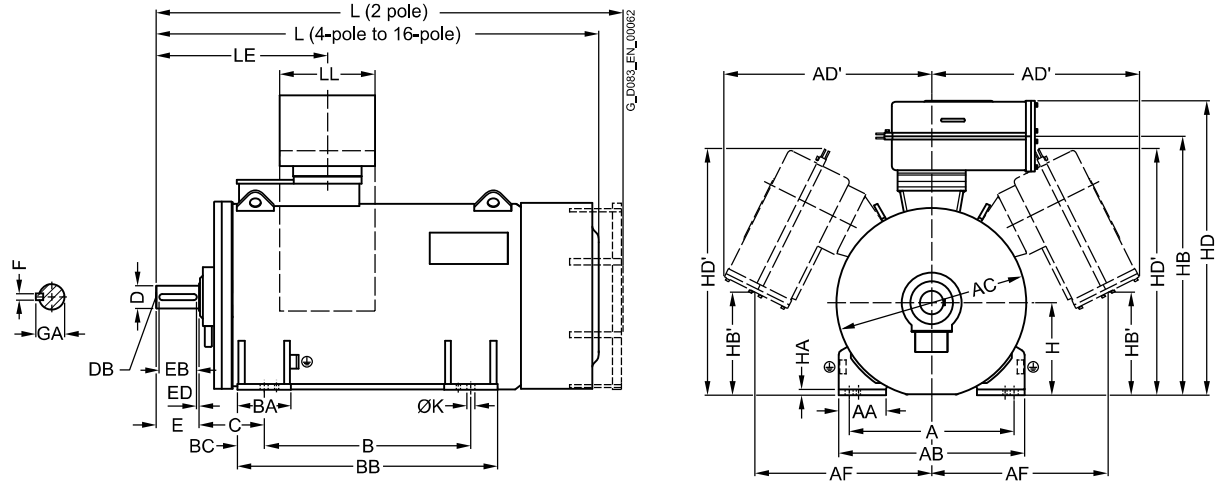


		Dimension designation acc. to **IEC**					DE shaft extension						NDE shaft extension						
Frame size	No. of poles	LC	LE	LF	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
LOHER CHEMSTAR																			
280 S	2	1269	582	1231	354	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16					75					20	79.5	75					20	79.5
280 M	2	1269	582	1231	354	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16					75					20	79.5	75					20	79.5
315 S	2	1494	630	1422	401	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16	1554	660	1452		80		170	140	15	22	79.5	80		170	140	15	22	80
315 M	2	1494	630	1422	401	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16	1554	660	1452		80		170	140	15	22	85	80		170	140	15	22	85
315 LL	2	1694	630	1609	401	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16	1741	660	1639		80		170	140	15	22	85	80		170	140	15	22	85
315 L	2	1694	630	1609	401	65	M20	140	125	7.5	18	69	65	M20	140	125	7.5	18	69
	4 … 16	1741	660	1639		80		170	140	15	22	85	80		170	140	15	22	85
355 M	2	1986	793	1947	401	75	M20	140	125	7.5	20	79.5	75	M20	140	125	7.5	20	80
	4 … 16	2115	863	2006	401	100	M24	210	180	15	28	106	75	M20	140	125	7.5	20	79.5

Dimensional drawings (continued)

Type of construction IM B3

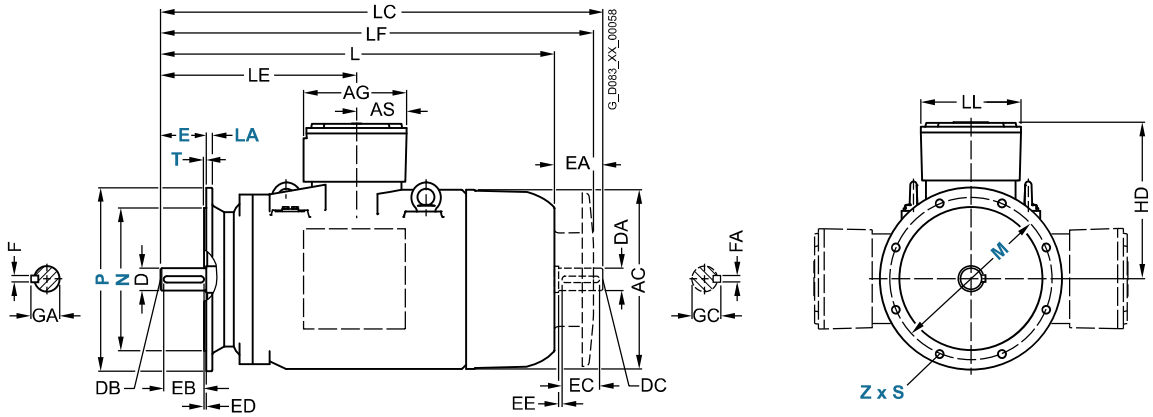
Design of terminal box and position for LOHER VARIO



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/75.

Design of terminal box and position for LOHER VARIO

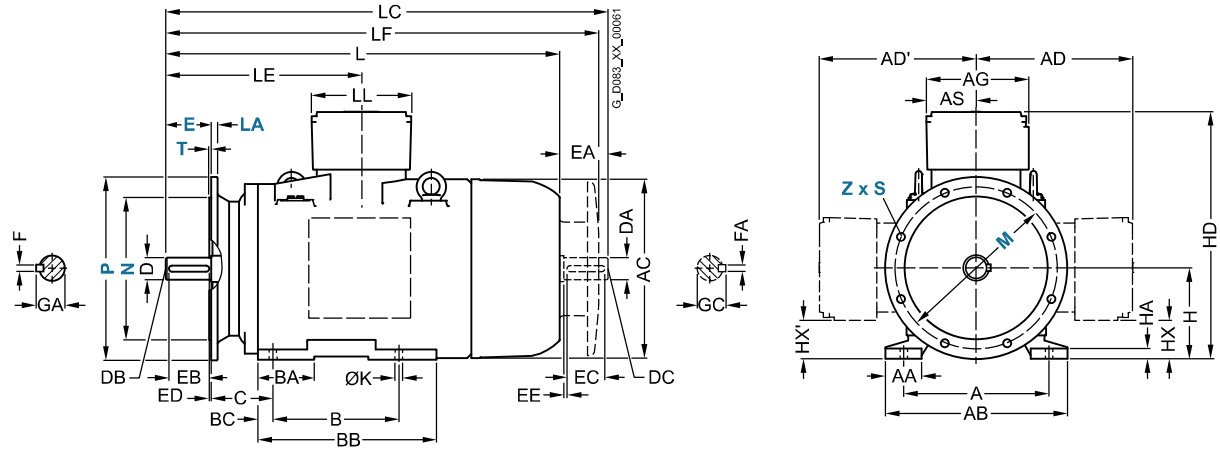


		Dimension designation acc. to **IEC**																	
Frame size	No. of poles	A	AA	AB	AC	AF	AG	AS	B	BA	BB	BC	C	H	HA	HD	øK	L
LOHER VARIO																		
355 LB	2 4 … 16	610	120	700	698				630	150	720		254	355	30	1062	28	1870 1775
355 LC/LD	2 4 … 16	610	120	700	698				800	150	890		254	355	30	1062	28	1950 1855
355 L	2 4 … 16	630	140	780	740		511		800	210	950		254	355	35	1240	33	2016 1900
400 L	2 4 … 16	710	185	860	820		511		900	210	1090		280	400	30	1305	33	2131 2025
450 L	2 4 … 16	800	230	900	920		511		1000	260	1260		315	450	30	1430	39	2251 2180
500 L	2 4 … 16	900	220	1030	1015		511		1120	280	1400		335	500	40	1530	39	2421 2375

Dimensional drawings (continued)

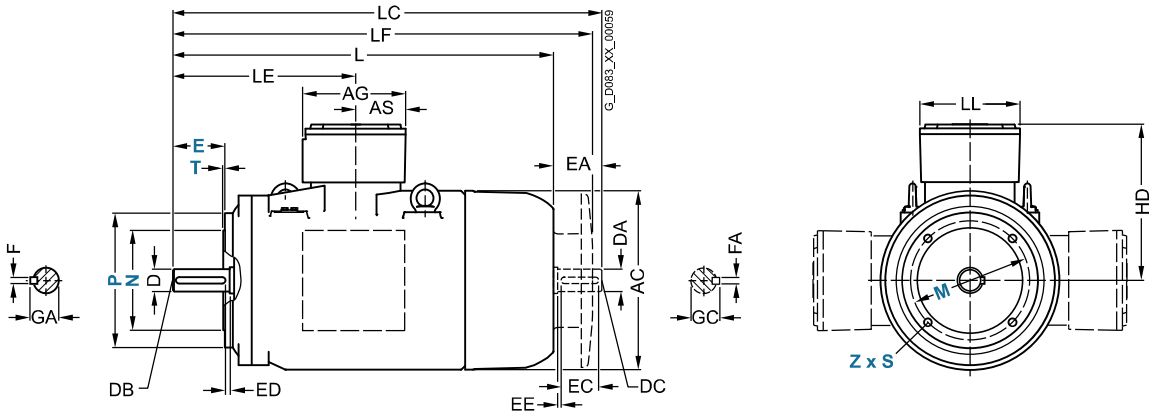
Type of construction IM B35

For flange dimensions, see Page 2/75.
Design of terminal box and position for LOHER VARIO



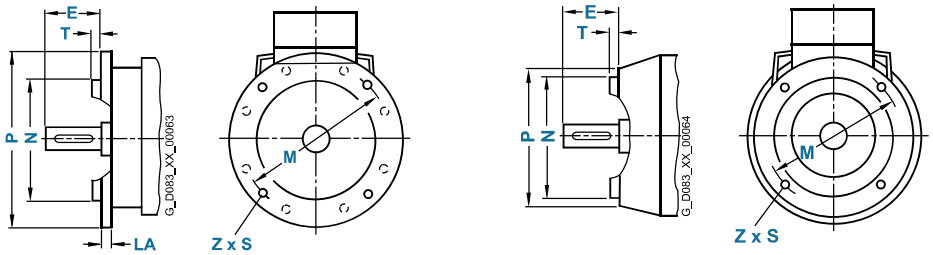
Type of construction IM B14

For flange dimensions, see Page 2/75.
Design of terminal box and position for LOHER VARIO



		Dimension designation acc. to **IEC**					DE shaft extension						NDE shaft extension						
Frame size	No. of poles	LC	LE	LF	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
LOHER VARIO																			
355 LB	2		779	1870		75	M20	140	125	7.5	20	79.5	75	M20	140	125	7.5	20	80
	4 … 16		809	1935		90	M24	170	140	15	25	95	90	M24	170	140	15	25	95
355 LC/LD	2		779	1950		75	M20	140	125	7.5	20	79.5	75	M20	140	125	7.5	20	80
	4 … 16		809	2015		90	M24	170	140	15	25	95	90	M24	170	140	15	25	95
355 L	2		750	2016		75	M20	170	125	7.5	20	79.5	75	M20	170	125	7.5	20	80
	4 … 16		780	2066		90	M24	210	140	15	25	95	90	M24	210	140	15	25	95
400 L	2		780	2131		80	M20	170	140	15	22	85	80	M20	170	140	15	22	85
	4 … 16		820	2191		100	M24	210	180		28	106	100	M24	210	180		28	106
450 L	2		780	2251		85	M20	170	140	15	22	90	85	M20	170	140	15	22	90
	4 … 16		820	2346		110	M24	210	180		28	116	110	M24	210	180		28	116
500 L	2		780	2421		90	M24	170	140	15	25	95	90	M24	170	140	15	25	95
	4 … 16		820	2541		120		210	180		32	127	120		210	180		32	127

Dimensional drawings



In EN 50347, the frame sizes are allocated flange FF with through holes and flange FT with tapped holes.
(Z = the number of retaining holes)

Frame size	No. of poles	Flange with through hole (**FF**)/ tapped hole (**FT**) acc. to EN 50347	Dimension designation acc. to **IEC**							
		Selectable flange	**LA**	**E**	**M**	**N**	**P**	**S**	**T**	**Z**
LOHER CHEMSTAR										
71 B	2 … 16	FF130	10	30	130	110	160	9.5	3.5	4
		FT85	15	30	85	70	105	M6	2.5	4
		FT115 [1]	15	–	115	95	140	M8	3	4
		FT100 [1]	15	–	100	80	120	M6	3	4
		FT130 [1]	15	–	130	110	160	M8	3.5	4
80 B	2 … 16	**FF165**	10	40	165	130	200	11.5	3.5	4
		FT100	15	40	100	80	120	M6	3	4
		FT130 [1]	10	–	130	110	160	M8	3.5	4
		FT85 [1]	15	–	85	70	105	M6	2.5	4
		FT115 [1]	15	–	115	95	140	M8	3	4
90 L	2 … 16	**FF165**	10	50	165	130	200	11.5	3.5	4
		FT115	10	50	115	95	140	M8	3	4
		FT130 [1]	13.5	–	130	110	160	M8	3.5	4
		FT110 [1]	13.5	–	110	80	140	M6	3	4
100 L	2 … 16	**FF215**	11	60	215	180	250	14	4	4
		FT130	10	60	130	110	160	M8	3.5	4
		FT115 [1]	10	–	115	95	140	M8	3	4
		FT165 [1]	12	–	165	130	200	M10	3.5	4
112 M	2 … 16	**FF215**	11	60	215	180	250	14	4	4
		FT130	10	60	130	110	160	M8	3.5	4
		FT165 [1]	12		165	130	200	M10	3.5	4
132 S	2 … 16	**FF265**	12	80	265	230	300	14	4	4
132 M	2 … 16	**FF265**	12	80	265	230	300	14	4	4
160 M	2 … 16	**FF300**	20	110	300	250	350	18	5	4
160 L	2 … 16	**FF300**	20	110	300	250	350	18	5	4
180 M	2 … 16	**FF300**	16	110	300	250	350	18	5	4
180 L	2 … 16	**FF300**	16	110	300	250	350	18	5	4
200 L	2 … 16	**FF350**	20	110	350	300	400	18	5	8
225 S	2	**FF400**	16	110	400	350	450	18	5	8
	4 … 16			140						
		FF500 [1]	22	–	500	450	550	18	5	8
225 M	2	**FF400**	16	110	400	350	450	18	5	8
	4 … 16			140						
		FF500 [1]	22	–	500	450	550	18	5	8
250 M	2 … 16	**FF500**	18	140	500	450	550	18	5	8
		FF400 [1]	16	–	400	350	450	18	5	8
		FF600 [1]	22	–	600	550	660	22	6	8

[1] Flange is selectable at no additional cost.

Dimensional drawings (continued)

Frame size	No. of poles	Flange with through hole (**FF**)/ tapped hole (**FT**) acc. to EN 50347	Dimension designation acc. to **IEC**							
		Selectable flange	**LA**	**E**	**M**	**N**	**P**	**S**	**T**	**Z**
LOHER CHEMSTAR (continued)										
280 S	2 … 16	**FF500**	18	140	500	450	550	18	5	8
		FF400 [1]	16	–	400	350	450	18	5	8
		FF600 [1]	22	–	600	550	660	22	6	8
280 M	2 … 16	**FF500**	18	140	500	450	550	18	5	8
		FF400 [1]	16	–	400	350	450	18	5	8
		FF600 [1]	22	–	600	550	660	22	6	8
315 S	2	**FF600**	22	140	600	550	660	24	6	8
		FF500 [1]	22	–	500	450	550	18.5	5	8
	4 … 16	**FF600**	22	170	600	550	660	24	6	8
		FF500 [1]	22	–	500	450	550	18.5	5	8
315 M	2	**FF600**	22	140	600	550	660	24	6	8
		FF500 [1]	22		500	450	550	18.5	5	8
	4 … 16	**FF600**	22	170	600	550	660	24	6	8
		FF500 [1]	22		500	450	550	18.5	5	8
315 LL	2	**FF600**	22	140	600	550	660	24	6	8
		FF740 [1]	25		740	680	800	24	6	8
	4 … 16	**FF600**	22	170	600	550	660	24	6	8
		FF740 [1]	25		740	680	800	24	6	8
315 L	2	**FF600**	22	140	600	550	660	24	6	8
		FF740 [1]	25		740	680	800	24	6	8
	4 … 16	**FF600**	22	170	600	550	660	24	6	8
		FF740 [1]	25		740	680	800	24	6	8
355 M	2 4 … 16	**FF740**	25	140 210	740	680	800	24	6	8
LOHER VARIO										
355 LB	2 4 … 16	**FF740**	25	140 170	740	680	800	24	6	8
355 LC/LD	2 4 … 16	**FF740**	25	140 170	740	680	800	24	6	8
355 L	2 4 … 16	**FF740**	25	140 170	740	680	800	24	6	8
400 L	2 4 … 16	**FF940**	28	170 210	940	880	1000	24	6	8
450 L	2 4 … 16	**FF1080**	30	170 210	1080	1000	1150	28	6	8
500 L	2 4 … 16	**FF1180**	30	170 210	1180	1120	1250	28	7	8

[1] Flange is selectable at no additional cost.