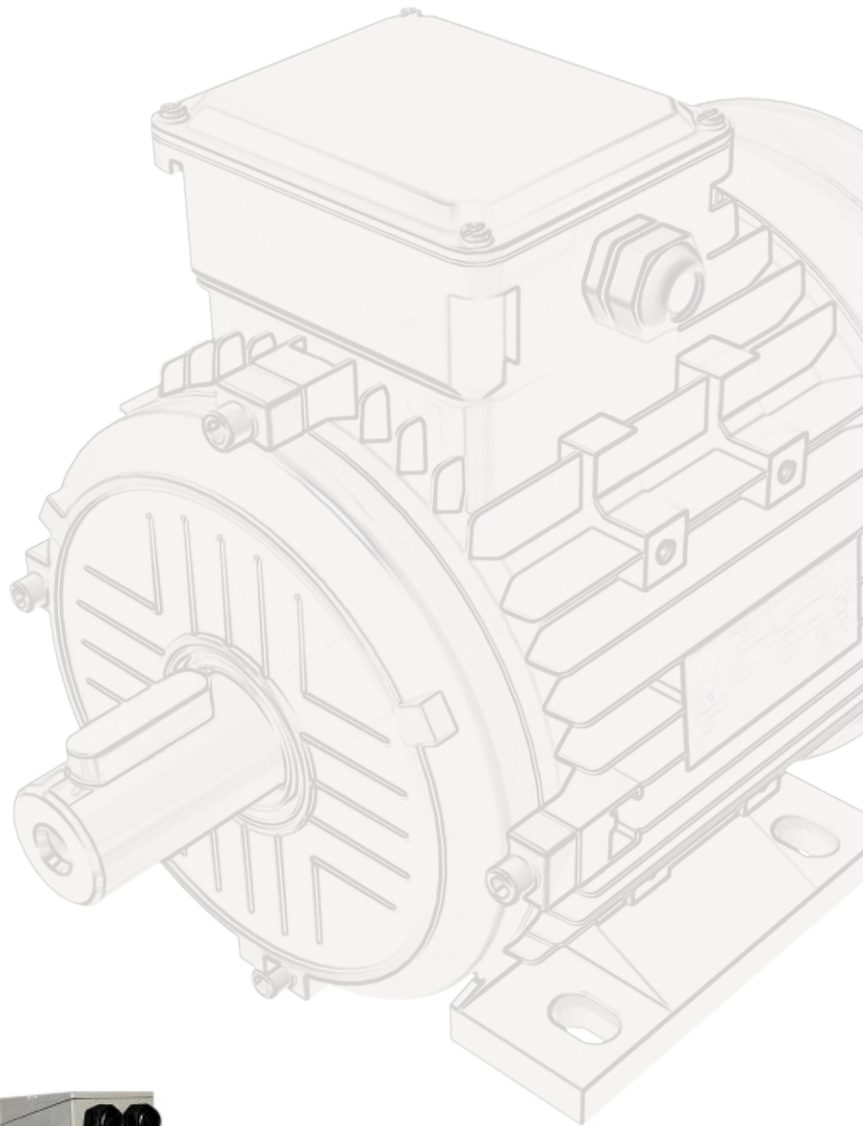


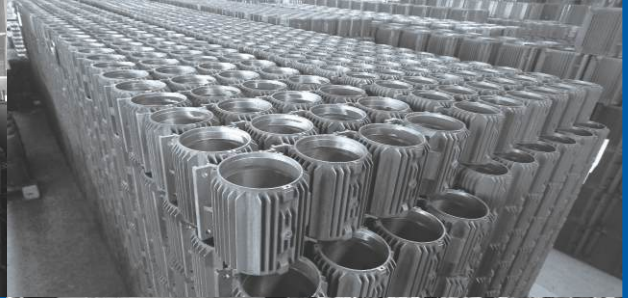
DAGER

Electric motor



Standard Induction Motor

2016-2017 Version



DAGER

Electric motor



OVERVIEW

The IE1/IE2/IE3 series of 3 phase asynchronous motors are Totally Enclosed Fan Cooled (TEFC) with IP55 environmental protection. These motors are designed and manufactured in accordance with IEC standards.

Standard Features

- **Frame material** : Cast Iron & Aluminum
- **Terminal box material** : Cast Iron & Aluminum
Plastic cable entry is standard (Metallic cable entry is optional)
- **Standard colour** : Dark Grey (Other paint options)
- Specific wound stators supporting multiple 3PH mains supply voltages at 50Hz or 60Hz
- **Aluminum Frame sizes** : 63mm ~ 160mm
- **Cast Iron Frame sizes** : 80mm ~ 355mm
- **Rated power range** : 0.09kW ~ 355kW at 50Hz
- Standard mounting types and variations (IEC 60034-7)
TEFC with IP55 degree of protection (IEC 60034-5)

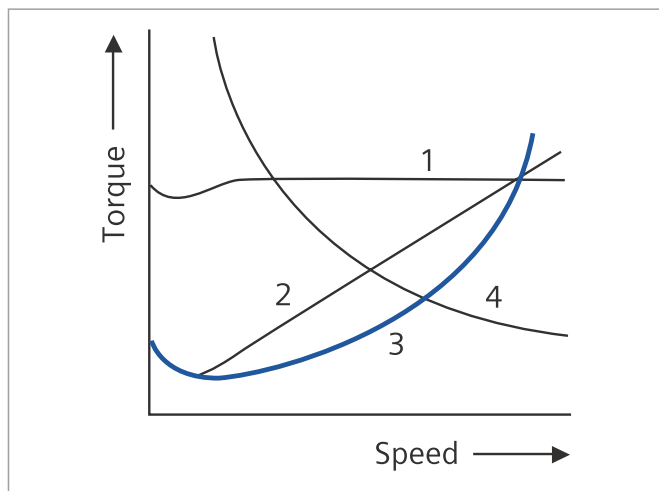
IP 55	Dust protected	Jetting Water
IP 56	Dust protected	Powerful Jetting
IP 65	Dust Tight	Jetting Water
IP 66	Dust Tight	Powerful Jetting

 All Electric motor are protected to IP55 as a minimum Higher levels of protection are available on request ..
- Overload capacity of 1.5 times rated current for 2 minutes(IEC 60034-1)
- Oil seal as standard on DE and NDE rotor shaft for motor with FS 63-355
- Anti-condensation heater (space heater) as option
- Winding protection with PTC, PT130 or PT150 as option
- Insulation class: F, used according to temperature rise B
- Flexible cable entry (Rotatable terminal box)
- Rotor shaft with open or closed keyway (A type key) and NDE shaft extension
- Regreasing Nipples from size 160 and up

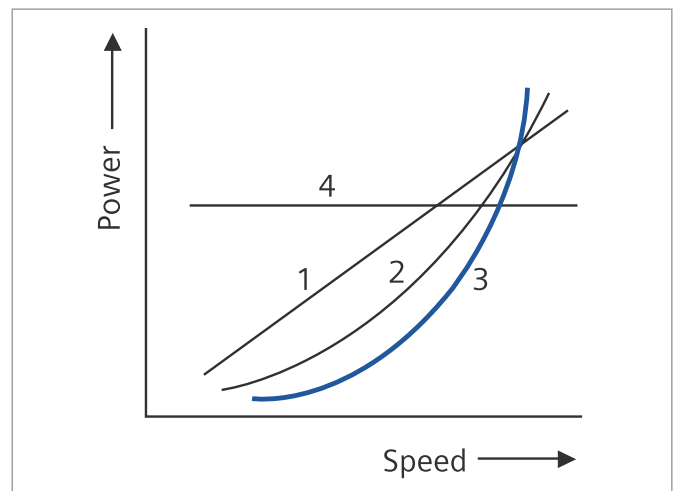


The IE1/IE2/IE3 is a general purpose motor with cast iron frame designed for constant or adjustable speed with continuous duty operation (S1) torque over a speed range.

Load torque characteristics



Torque / speed characteristic



Power / speed characteristic

1. Torque almost constant; power proportional to speed.
2. Torque increases proportionally with the speed; power proportional to the square of the speed.
3. Torque increases proportionally with the square of the speed; power proportional to the cube of the speed.
4. Torque decreases in inverse proportion to the speed; power constant.

Nameplate

Motor type
Duty cycle
Series No
Drive –end Bearing & Non-Drive-end bearing
Protection degree
Weight
Insulation class
Rated voltage
Rated frequency
RPM
Rated output
Electric current
Power factor

DAGER ELECTRIC MOTOR								CE
TYPE DG – 280M – 2			IEC 60034-1		Nr. 0879000900661			
V.	Hz	Conn	kW	A	Eff %	Cos ϕ	rpm	
380/660	50	Δ/Y	90	160 / 92.2	93.9%	0.91	2970	
440/770	60		108	138 / 78.8	93.9%	0.91	3560	
Weight 540	kg	duty S1	Ins.Cl. F	IP 55	IM B3	Amb. 40°C		
Brgs.DE 6314 C3 :NDE 6314 C3					PTC 155°C			
Technology By Germany					Made in China			

Mechanical Design

Terminal box

Terminal boxes are top mounted as default on the motor. This box can be rotated by 4 X 90° to allow for cable entry from each direction. In addition the terminal box can be installed either on the Left Hand Side or Right Hand Side when viewed from the drive end (DE) side of the motor.

Motor Type	Frame Size	Protection degree	Rotation of Terminal box	Number of Cable grand	Terminal Box material	Terminal bus	Max.cable Size(mm²)	Cable entry size
IE1/IE2/IE3	63	IP 55	4x90°	1	Aluminum	M4	2	M18X1.5
	71	IP 55	4x90°	1	Aluminum	M4	2	M18X1.5
	80	IP 55	4x90°	1	Aluminum	M4	2.5	M20X1.5
	90	IP 55	4x90°	1	Aluminum	M5	2.5	M20X1.5
	100	IP 55	4x90°	1	Aluminum	M5	4	M25X1.5
	112	IP 55	4x90°	1 or 2	Aluminum	M5	4	M27X1.5
	132	IP 55	4x90°	1 or 2	Aluminum	M5	6	M27X1.5
	160	IP 55	4x90°	2	Cast-iron	M6	10	2-M32X1.5
	180	IP 55	4x90°	2	Cast-iron	M6	16	2-M32X1.5
	200	IP 55	4x90°	2	Cast-iron	M8	25	2-M40X1.5
	225	IP 55	4x90°	2	Cast-iron	M8	35	2-M40X1.5
	250	IP 55	4x90°	2	Cast-iron	M10	120	2-M50X1.5
	280	IP 55	4x90°	2	Cast-iron	M10	120	2-M50X1.5
	315	IP 55	4x90°	2	Cast-iron	M16	240	2-M63X1.5
	355	IP 55	4x90°	2	Cast-iron	M20	400	2-M72X2

Cooling and Ventilation

The standard motors from FS 80 ~ 355 are fitted with an radial flow fan for cooling in accordance with IEC 60034-6 cooling method. For applications where self ventilation is not adequate, an optional external blower can be ordered.

Bearing

All motors are supplied with the ball bearing as standard. FS 160 and above, roller bearings and angular contact ball bearings on options. These bearings are either of the sealed or regreasable type.

Bearing type

Motor Type	Frame Size	Poles	Drive –end Bearing	Non-Drive-end bearing
IE1/IE2/IE3-63	63	2.4.6.8	6201 2RZC3	6201 2RZC3
IE1/IE2/IE3-71	71	2.4.6.8	6202 2RZC3	6202 2RZC3
IE1/IE2/IE3-80	80	2.4.6.8	6204 2RZC3	6204 2RZC3
IE1/IE2/IE3-90	90	2.4.6.8	6205 2RZC3	6205 2RZC3
IE1/IE2/IE3-100	100	2.4.6.8	6206 2RZC3	6206 2RZC3
IE1/IE2/IE3-112	112	2.4.6.8	6306 2RZC3	6306 2RZC3
IE1/IE2/IE3-132	132	2.4.6.8	6308 2RZC3	6308 2RZC3
IE1/IE2/IE3-160	160	2.4.6.8	6309 C3	6309 C3
IE1/IE2/IE3-180	180	2.4.6.8	6311 C3	6311 C3
IE1/IE2/IE3-200	200	2.4.6.8	6312 C3	6312 C3
IE1/IE2/IE3-225	225	2.4.6.8	6313 C3	6313 C3
IE1/IE2/IE3-250	250	2.4.6.8	6314 C3	6314 C3
IE1/IE2/IE3-280	280	2	6314 C3	6314 C3
IE1/IE2/IE3-280	280	4.6.8	6317 C3	6317 C3
IE1/IE2/IE3-315	315	2	6317 C3	6317 C3
IE1/IE2/IE3-315	315	4.6.8	6319 C3	6319 C3
IE1/IE2/IE3-355	355	2	6319 C3	6319 C3
IE1/IE2/IE3-355	355	4.6.8	6322 C3	6322 C3

General Specifications

Voltages / Frequencies

Standard Voltages are 380v-420 50Hz and 440-480 60Hz

Insulation

The components of the insulation system are selected so as to ensure good protection against chemically aggressive gases,vapours,dust,oil and air humidity.

All materials used for insulating the winding and winding ends correspond to insulating classes F or H according to IEC 60085:

- -Enamel-insulated copper wires with temperature index 200(Class H);
- -Insulating sheet on polyester base (Class F);
- -Impregnation with fenolic resins modified with polyester resins (Class H);

Limit temperature for insulating material according IEC60085

Insulation Class	Limit Temperature (°C)
B	130
F	155
H	180

Temperature Rise

Standard single-speed continuous duty (S1) motors have temperature rise within class B limit.Motors with higher output and pole-changing motors normaly have tempture rise within Class F limit .

Insulation Class	Max Temperature Rise (°C)
B	80
F	105
H	125

Temperature rises specified at a reference ambient air temperature of 40°C

PTC temperature sensor (thermistors):

It consist of 3 sensors connected in series embedded in the stator winding .

Once reaching the operating temperature,the device quickly changes its resistance;

it must be connected to a suitable releasing device (supplied on motors 11kW and above)

Duty Cycles

S1 Continuous Duty	Operation under constant load,lasting long enough to allow the machine to reach thermal equilibrium.
S2 Short-Time Duty	Operation under constant load,for a time too short to allow the machine to reach thermal equilibrium.Idle time of the machine is long enough to allow the machine to cooldown to ambient temperature. Standard duration of short-term operation:10,30,60 and 90 minutes.
S3 Intermittent Periodic Duty	Operation under repeated,constant load in specified cycles.Neither operating nor resting period are long enough to allow the motor to reach thermal equilibrium.The starting losses are small and do not essentially influence the temperature rise.The nominal values of relative starting time are 15,25,40,60% at a daily 10-minute cycle.
S4 Intermittent Periodic Duty	Operation under repeated,constant load in specified cycles.The start of the motor influences the temperature rise.
S5 Intermittent Periodic Duty	Same as S4 operation,except that the electric braking of the machine has an essential influence on the temperature rise.
S6 Continuously Operation With Cyclic Load	Operation consisting of a continuous series of equal cycles.Each cycle is made up of no load and a constant load period.The cycle duration is not long enough to allow the machine to reach thermal equilibrium in one cycl.In order to define S6 operation , the relative starting time must be specified.
S7 Intermittent Periodic Duty with Starting and Braking	Uninterrupted operation with a series of constant loading and braking periods.The most demanding type of operation for the motor.In order to define this type of operation,The number of cycles per hour and the inertia constant must be specified.
S8 Intermittent Periodic Duty with pole Changing	This type of operation only exists with pole amplitude modulated motors.In this case the definition of operation must contain the following data for each pole: -Number of starts per hour -Inertia constant -Relative operation period

Electrical Design

Reliable quality and performance

To ensure reliable and long life, the windings are made of materials with class F temperature rise limited to class B (80K) .

Voltage and Frequency

Standard motor will operate on mains power supplies in accordance with IEC 60034-1 Category A (combination of voltage deviation $\pm 5\%$ and frequency deviation $\pm 2\%$) voltage and frequency fluctuations

Rated Output

Rated output power refers to continuous duty (S1) operation in accordance with IEC 60034-1 when operated at 40°C ambient temperature and at site altitudes of 1000m or less. current overload is in accordance with IEC 60034-1(1.5 times for 2 minutes)

Environmental

- Suitable for IP55 installations
- Below or equal to 1000m above sea level
- Operating temperature between -20°C and 40°C
- Relative humidity

Temperature	Relative Humidity
-20°C ≤ T ≤ 20°C	100%
20°C < T ≤ 30°C	95%
30°C < T ≤ 40°C	55%

Note: For other requirements, Dager should be consulted

If environmental conditions vary from those listed above, please consult the chart below for output power derating factor.

	< 30°C	30~40°C	45°C	50°C	55°C	60°C
1000m	1.07	1.00	0.96	0.92	0.87	0.82
1500m	1.04	0.97	0.93	0.89	0.84	0.79
2000m	1.00	0.94	0.90	0.86	0.82	0.77
2500m	0.96	0.90	0.86	0.83	0.78	0.74
3000m	0.92	0.86	0.82	0.79	0.75	0.70
3500m	0.88	0.82	0.79	0.75	0.71	0.67
4000m	0.82	0.77	0.74	0.71	0.67	0.63

Space heater electrical data

Frame Size	80~90	100~112	132~160	180~200	225~280	315	355
Power(W)	20	30	40	50	60	80	110
Voltage(V)	220						

Converter fed application

IE1 / IE2 / IE3 motors are suitable for pumps, fans, compressors, textile machine and mechanical machine applications where variable or constant speed is required. When motor operating with a constant load by a speed lower than 50% of rated speed, External separately driven fan.

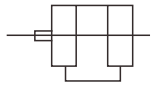
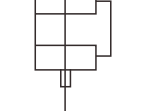
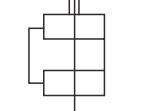
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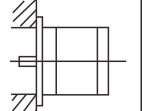
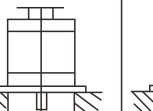
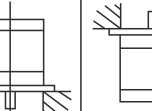
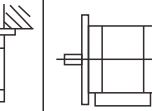
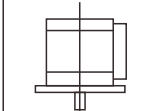
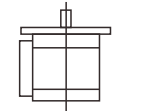
(1) In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements.(2) The installation guidelines of the converter manufacturer with regards to electromagnetic compatibility must be considered at all times during the design and implementation phases.

Technical data for separated fan

Motor frame size	Voltage (V)	Frequency (HZ)	Rated Output (kW)	Current Noise (A)	Speed (r/min)	Fan Power (m³/h)	Fan Pressure (Pa)
80	380V	50	30	0.08	2400	330	60
90	380V	50	52	0.2	2800	390	60
100	380V	50	52	0.2	2800	600	70
112	380V	50	52	0.2	2800	800	80
132	380V	50	40	0.1	2400	1000	70
160	380V	50	80	0.23	1400	1000	50
180	380V	50	80	0.23	1400	1200	55
200	380V	50	230	0.71	1400	1800	65
225	380V	50	230	0.71	1400	1800	65
250	380V	50	230	0.71	1400	3300	85
280	380V	50	230	0.71	1400	4000	110
315	380V	50	370	1.1	1250	6200	180
355	380V	50	550	1.8	1350	7000	180

Construction or mounting type

Construction type	With feet and without flange on the end-shield (DE)					
Mounting type	IM B3 FS 80 ~ 355	IM B6 FS 80 ~ 160	IM B7 FS80 ~ 160	IM B8 FS 80 ~ 160	IM V5 FS 80 ~ 225	IM V6 FS 80 ~ 225
Diagram						

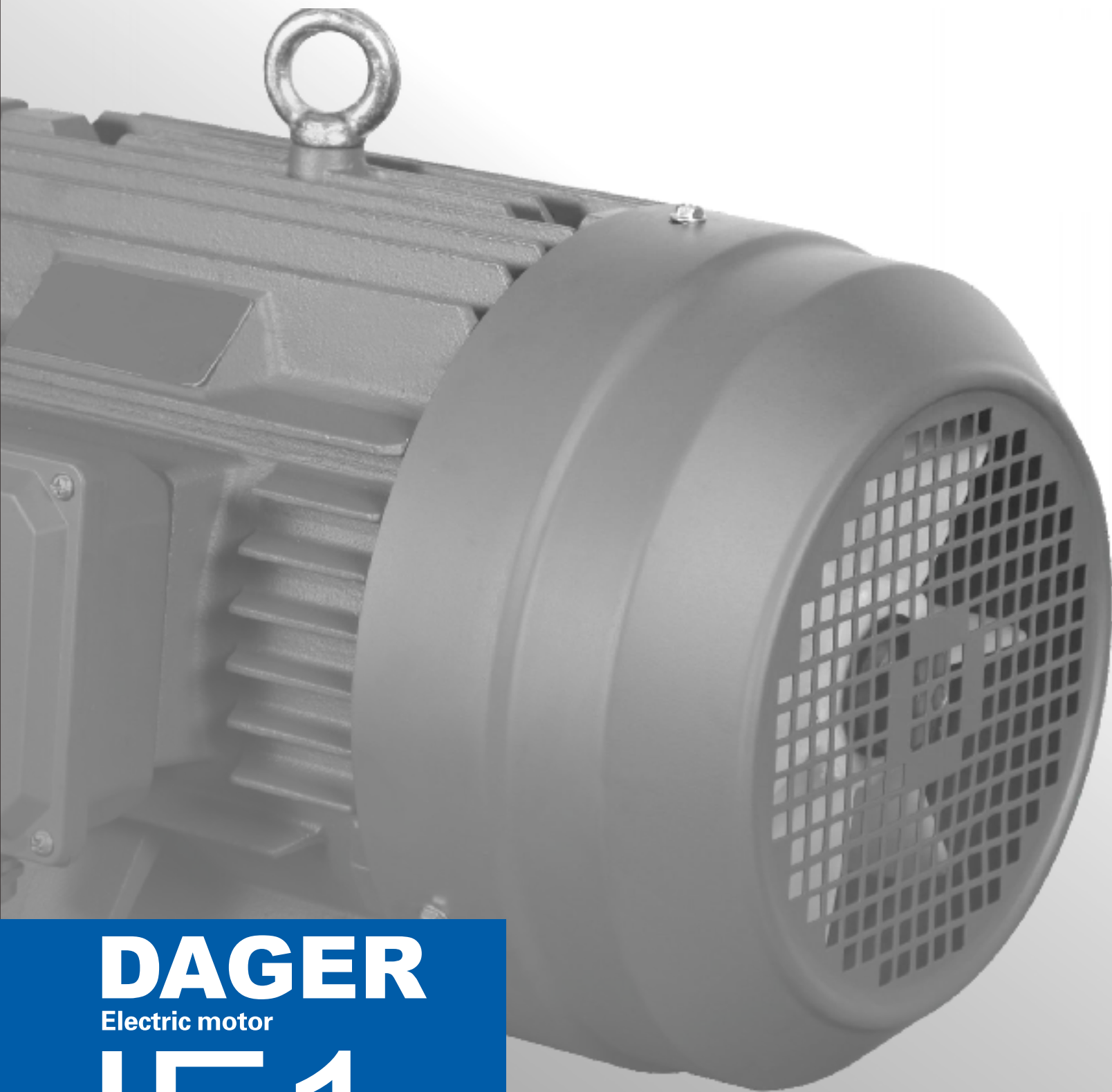
Construction type	Without feet and with flange on the end-shield (DE)			With feet and with flange on the end-shield (DE)		
Mounting type	IM B5 FS 80 ~ 280	IM V1 ¹⁾ FS 80 ~ 355		IM V3 FS 80 ~ 160	IM B35 FS 80 ~ 355	IM V15 FS 80 ~ 160
Diagram						

1) For IMV1 with canopy and without canopy, motor has different order number. Please find detailed information in "Technical data table".

Frequent malfunctions and solutions

Stoppage	Possible reasons	Check or calibration methods
1. No-load motor can't start	1. Circuit broken wires (one of the three is the root) 2. When the child three-phase winding of the a phase breakers ("Y" type of connection) 3. The power supply voltage and frequency is wrong	Check the power supply voltage or individual connection. Check the fuse, feeders of current and each phase of the winding resistance. Check voltage and frequency
2. Motor load in cannot begin at low load or no-load to start when, but in load increase speed that are even stop to plunge	1. The low voltage power supply 2. The group turns around the son between short circuit 3. The stator three-phase winding out-of-phase break line ("Δ" then method) 4. Overload	Check the line voltage; Check each phase windings and each phase no-load current; Check each phase winding resistance; Check the load
3. Motor stay in low rotation speed	1. A connect the stator winding, motor hair crosstalk 2. The rotor ring and guide bar among fracture	Check feeders current and lead wire mark; Check short-circuit current
4. Stator overheating	1. Feeders three roots there was a break or stator winding a phase open circuit 2. The power supply voltage too big or too low 3. overload 4. Same stator circle or short circuit 5. And ventilated bad	Check the fuse, line voltage and current between wire; Check the current in a feeders, Check the stator alternate with and ground insulation resistance; Check the winding resistance and stable way
5. Bearing overheating	1. The assembly wrong 2. The motor shaft and the dragging is not parallel axis 3. No lubricating oil, oil impurities or oily bad there 4. Belts tight 5. Don't balance of magnetic big suction	Check whether the rotor to turn; Correction two axis balance; Use the car wash oil changing; The belt or loose move feet; Check the air gap eccentric degrees
6. When feeder insurance facilities trip	1. A connect the stator winding 2. Put a "Y" shall meet type stator windings to become "Δ" Δ 3. Winding base to short circuit or alternate with short circuit	Check mark and lead wire by law; Check mark and lead wire by law; Check the phase windings of the insulation and the same base of insulation
7. Mechanical vibration	1. Relet not only in balance quite a low speed don't vibration 2. the axial moving there 3. transmission belt joint answered the bad 4. pulley is not even	Check the balance situation; Check the clearance of bearing, and to make adjustments. To meet the belt; Check the pulley

Note: There are many reasons for the malfunctions, sometimes there might be several reasons for one problem, sometimes one reason might cause several problems. These listed in the table are just those frequent appeared, please don't hesitate to contact us while in need.



DAGER

Electric motor

IE1

IE1 PERFORMANCE DATA

Type No.	Rated output (kW)	HP	Rated current IFL 380V A	Rated current IFL 400V A	Rated current IFL 420V A	Rated speed (r/min)	Rated current IFL 440V A	Rated current IFL 460V A	Rated current IFL 480V A	Rated speed (r/min)	EFF %	Power factor cos φ	Rated Torque N.m	Start Torque Rated Torque TST/TFL	Start Torque Rated Torque IST/IFL	Max Torque Rated Torque TM/TFL	Noise level LW dB(A)	Weight (Kg)
IE1																		
	380~420V/50Hz						440~480V/60Hz											
	Synchronous speed 3000r/min																	
IE1-63M1-2	0.18	0.25	0.53	0.50	0.48	2720	0.46	0.44	0.42	3260	65.0	0.80	0.6	2.2	5.5	2.2	61	7
IE1-63M2-2	0.25	0.37	0.69	0.66	0.62	2720	0.60	0.57	0.55	3260	68.0	0.81	0.9	2.2	5.5	2.2	61	8
IE1-71M1-2	0.37	0.55	0.99	0.94	0.90	2740	0.86	0.82	0.78	3285	70.0	0.81	1.3	2.2	6.1	2.2	64	10
IE1-71M2-2	0.55	0.75	1.4	1.33	1.27	2740	1.21	1.16	1.11	3285	73.0	0.82	1.9	2.2	6.1	2.3	64	11
IE1-80M1-2	0.75	1.0	1.83	1.74	1.66	2825	1.58	1.51	1.45	3390	75.0	0.83	2.5	2.2	6.1	2.3	67	15
IE1-80M2-2	1.1	1.5	2.61	2.48	2.36	2825	2.25	2.16	2.07	3390	77.0	0.84	3.7	2.2	7.0	2.3	67	16
IE1-90S-2	1.5	2.0	3.46	3.29	3.13	2840	2.99	2.86	2.74	3405	79.0	0.84	5.0	2.2	7.0	2.3	72	19
IE1-90L-2	2.2	3.0	4.85	4.61	4.39	2840	4.19	4.01	3.84	3405	81.0	0.85	7.4	2.2	7.0	2.3	72	22
IE1-100L-2	3	4.0	6.34	6.02	5.74	2870	5.48	5.24	5.02	3440	83.0	0.87	10.0	2.2	7.5	2.3	76	32
IE1-112M-2	4	5.5	8.20	7.79	7.42	2880	7.08	6.77	6.49	3455	85.0	0.88	13.3	2.2	7.5	2.3	77	39
IE1-132S1-2	5.5	7.5	11.1	10.5	10.0	2900	9.59	9.17	8.79	3480	86.0	0.88	18.1	2.2	7.5	2.3	80	58
IE1-132S2-2	7.5	10	14.9	14.2	13.5	2900	12.9	12.3	11.8	3480	87.0	0.88	24.7	2.2	7.5	2.3	80	66
IE1-160M1-2	11	15	21.2	20.1	19.2	2930	18.3	17.5	16.8	3515	88.4	0.89	35.9	2.2	7.5	2.3	86	104
IE1-160M2-2	15	20	28.6	27.2	25.9	2930	24.7	23.6	22.6	3515	89.4	0.89	48.9	2.2	7.5	2.3	86	112
IE1-160L-2	18.5	25	34.7	33.0	31.4	2930	30.0	28.7	27.5	3515	90.0	0.90	60.3	2.2	7.5	2.3	86	132
IE1-180M-2	22	30	41.0	39.0	37.1	2940	35.4	33.9	32.5	3525	90.5	0.90	71.5	2.0	7.5	2.3	89	162
IE1-200L1-2	30	40	55.4	52.6	50.1	2950	47.9	45.8	43.9	3540	91.4	0.90	97.1	2.0	7.5	2.3	92	225
IE1-200L2-2	37	50	67.9	64.5	61.4	2950	58.6	56.1	53.8	3540	92.0	0.90	119.8	2.0	7.5	2.3	92	245
IE1-225M-2	45	60	82.1	78.0	74.3	2960	70.9	67.8	65.0	3550	92.5	0.90	145.2	2.0	7.5	2.3	92	290
IE1-250M-2	55	75	99.8	94.8	90.3	2965	86.2	82.4	79.0	3555	93.0	0.90	177.2	2.0	7.5	2.3	93	367
IE1-280S-2	75	100	135.3	128.5	122.4	2970	116.9	111.8	107.1	3560	93.6	0.90	241.2	2.0	7.5	2.3	94	495
IE1-280M-2	90	120	160.0	152.0	144.8	2970	138.2	132.2	126.7	3560	93.9	0.91	289.4	2.0	7.5	2.3	94	540
IE1-315S-2	110	150	195.4	185.6	176.8	2975	168.8	161.4	154.7	3570	94.0	0.91	353.1	1.8	7.1	2.2	96	880
IE1-315M-2	132	180	233.2	221.5	211.0	2975	201.4	192.6	184.6	3570	94.5	0.91	423.7	1.8	7.1	2.2	96	1000
IE1-315L1-2	160	220	279.3	265.3	252.7	2975	241.2	230.7	221.1	3570	94.6	0.92	513.6	1.8	7.1	2.2	99	1080
IE1-315L2-2	200	270	348.4	331.0	315.2	2975	300.9	287.8	275.8	3570	94.8	0.92	642.0	1.8	7.1	2.2	99	1130
IE1-355M-2	250	340	433.7	412.0	392.4	2980	374.6	358.3	343.4	3575	95.3	0.92	801.2	1.6	7.1	2.2	103	1560
IE1-355L-2	315	430	545.3	518.0	493.4	2980	470.9	450.5	431.7	3575	95.6	0.92	1009.5	1.6	7.1	2.2	103	1740

IE1 PERFORMANCE DATA

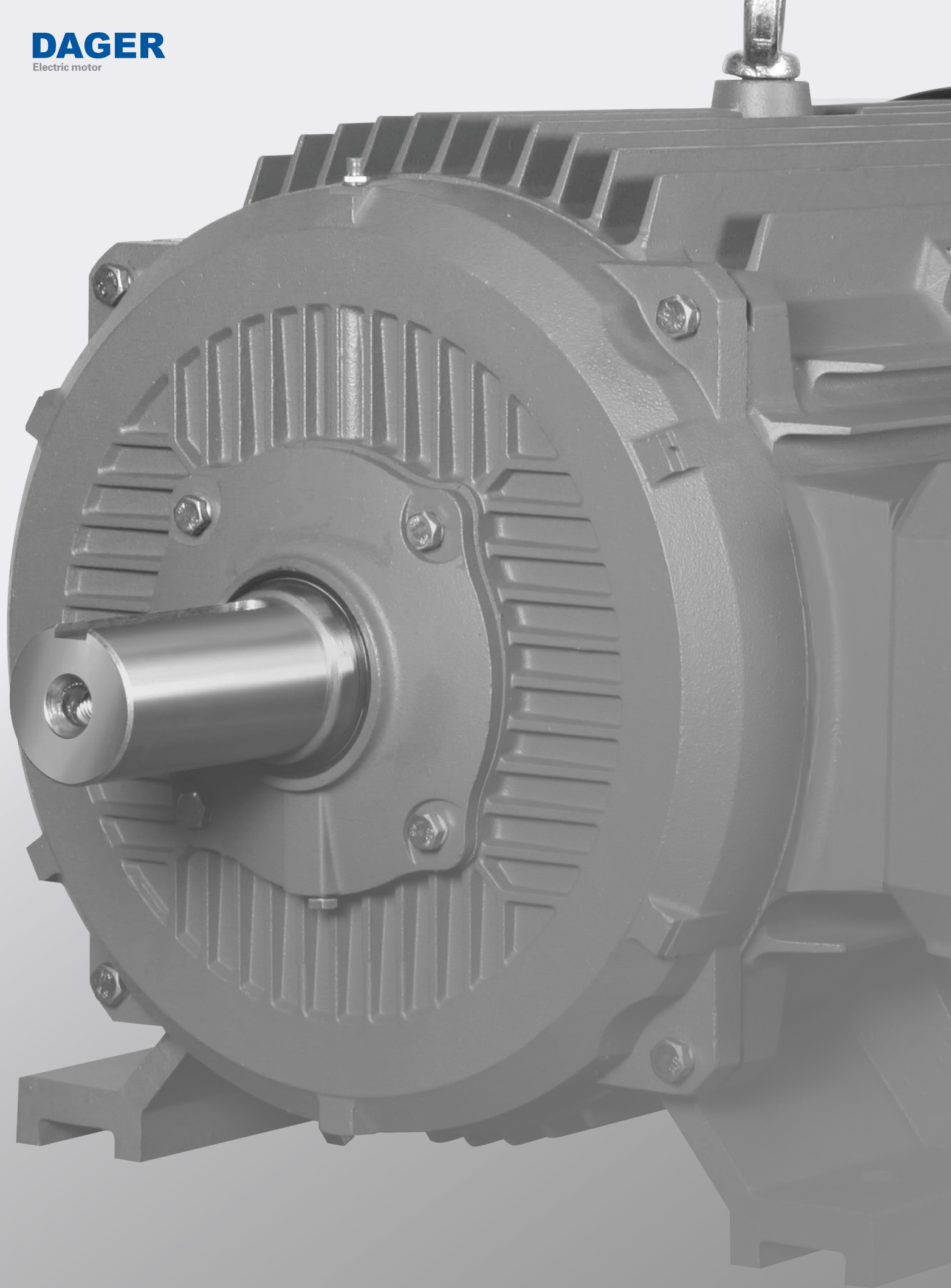
Type No.	Rated output (kW)	HP	Rated current IFL 380V A	Rated current IFL 400V A	Rated current IFL 420V A	Rated speed (r/min)	Rated current IFL 440V A	Rated current IFL 460V A	Rated current IFL 480V A	Rated speed (r/min)	EFF %	Power factor cos φ	Rated Torque N.m	Start Torque Rated Torque TST/TFL	Start Torque Rated Torque IST/IFL	Max Torque Rated Torque TM/TFL	Noise level LW dB(A)	Weight (Kg)
IE1																		
				380~420V/50Hz			440~480V/60Hz											
	Synchronous speed 1500r/min																	
IE1-63M1-4	0.12	0.18	0.44	0.42	0.40	1310	0.38	0.36	0.35	1570	57.0	0.72	0.9	2.1	4.4	2.2	52	7.5
IE1-63M2-4	0.18	0.25	0.62	0.59	0.56	1310	0.54	0.51	0.49	1570	60.0	0.73	1.3	2.1	4.4	2.2	52	8.5
IE1-71M1-4	0.25	0.37	0.79	0.75	0.71	1330	0.68	0.65	0.63	1595	65.0	0.74	1.8	2.1	5.2	2.2	55	10.5
IE1-71M2-4	0.37	0.55	1.12	1.06	1.01	1330	0.97	0.93	0.89	1595	67.0	0.75	2.7	2.1	5.2	2.2	55	11.5
IE1-80M1-4	0.55	0.75	1.57	1.49	1.42	1390	1.36	1.30	1.24	1665	71.0	0.75	3.8	2.4	5.2	2.3	58	15
IE1-80M2-4	0.75	1.00	2.05	1.95	1.85	1390	1.77	1.69	1.62	1665	73.0	0.76	5.2	2.3	6.0	2.3	58	16
IE1-90S-4	1.1	1.5	2.85	2.71	2.58	1400	2.46	2.35	2.26	1680	76.2	0.77	7.6	2.3	6.0	2.3	61	20
IE1-90L-4	1.5	2.0	3.68	3.50	3.33	1400	3.18	3.04	2.91	1680	78.5	0.79	10.3	2.3	6.0	2.3	61	23
IE1-100L1-4	2.2	3.0	5.09	4.84	4.61	1420	4.40	4.20	4.03	1700	81.0	0.81	14.9	2.3	7.0	2.3	64	31
IE1-100L2-4	3	4.0	6.73	6.39	6.09	1420	5.81	5.56	5.33	1700	82.6	0.82	20.3	2.3	7.0	2.3	64	35
IE1-112M-4	4	5.5	8.80	8.36	7.96	1440	7.60	7.27	6.97	1725	84.2	0.82	26.5	2.3	7.0	2.3	65	41
IE1-132S-4	5.5	7.5	11.7	11.1	10.6	1440	10.1	9.67	9.26	1725	85.7	0.83	36.5	2.3	7.0	2.3	71	60
IE1-132M-4	7.5	10.0	15.6	14.8	14.1	1440	13.5	12.9	12.4	1725	87.0	0.84	49.7	2.3	7.0	2.3	71	74
IE1-160M-4	11	15	22.5	21.4	20.4	1460	19.4	18.6	17.8	1750	88.4	0.84	72.0	2.2	7.0	2.3	75	108
IE1-160L-4	15	20	30.0	28.5	27.1	1460	25.9	24.8	23.8	1750	89.4	0.85	98.1	2.2	7.5	2.3	75	128
IE1-180M-4	18.5	25	36.3	34.5	32.8	1465	31.4	30.0	28.7	1755	90.5	0.86	120.2	2.2	7.5	2.3	76	158
IE1-180L-4	22	30	42.9	40.8	38.8	1465	37.1	35.4	34.0	1755	91.0	0.86	142.9	2.2	7.5	2.3	76	172
IE1-200L-4	30	40	58.0	55.1	52.5	1470	50.1	47.9	45.9	1760	92.0	0.86	194.9	2.2	7.2	2.3	79	241
IE1-225S-4	37	50	70.2	66.7	63.5	1475	60.6	58.0	55.6	1770	92.5	0.87	239.6	2.2	7.2	2.3	81	280
IE1-225M-4	45	60	85.0	80.8	76.9	1475	73.4	70.2	67.3	1770	92.8	0.87	291.4	2.2	7.2	2.3	81	305
IE1-250M-4	55	75	103.3	98.1	93.5	1475	89.2	85.3	81.8	1770	93.0	0.87	354.9	2.2	7.2	2.3	83	375
IE1-280S-4	75	100	139.3	132.3	126.0	1480	120.3	115.1	110.3	1775	93.8	0.87	484.0	2.2	7.2	2.3	86	507
IE1-280M-4	90	120	167.4	159.0	151.5	1480	144.6	138.3	132.5	1775	94.2	0.87	580.7	2.2	7.2	2.3	86	572
IE1-315S-4	110	150	201.0	191.0	181.9	1480	173.6	166.0	159.1	1775	94.5	0.88	709.8	2.1	6.9	2.2	93	930
IE1-315M-4	132	180	240.4	228.4	217.5	1480	207.6	198.6	190.3	1775	94.8	0.88	851.8	2.1	6.9	2.2	93	1050
IE1-315L1-4	160	220	287.8	273.4	260.4	1480	248.6	237.8	227.8	1775	94.9	0.89	1032.4	2.1	6.9	2.2	97	1110
IE1-315L2-4	200	270	359.8	341.8	325.5	1480	310.7	297.2	284.8	1775	95.0	0.89	1290.5	2.1	6.9	2.2	97	1180
IE1-355M-4	250	340	443.3	421.1	401.1	1490	382.9	366.2	351.0	1785	95.3	0.90	1602.3	2.1	6.9	2.2	101	1580
IE1-355L-4	315	430	558.6	530.7	505.4	1490	482.4	461.5	442.2	1785	95.6	0.90	2019.0	2.1	6.9	2.2	101	1750

IE1 PERFORMANCE DATA

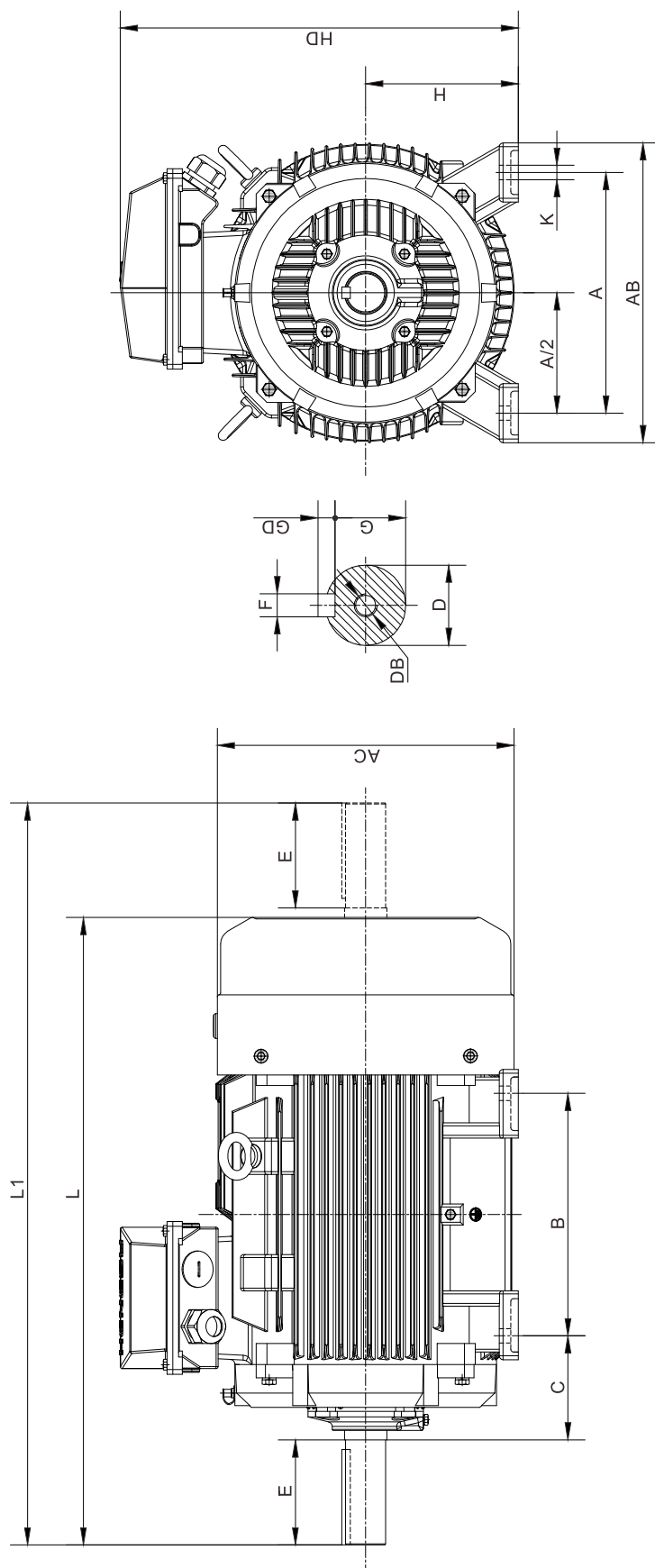
Type No.	Rated output (kW)	HP	Rated current IFL 380V A	Rated current IFL 400V A	Rated current IFL 420V A	Rated speed (r/min)	Rated current IFL 440V A	Rated current IFL 460V A	Rated current IFL 480V A	Rated speed (r/min)	EFF %	Power factor cos φ	Rated Torque N.m	Start Torque Rated Torque TST/TFL	Start Torque Rated Torque IST/IFL	Max Torque Rated Torque TM/TFL	Noise level LW dB(A)	Weight (Kg)
IE1																		
	380~420V/50Hz						440~480V/60Hz											
	Synchronous speed 1000r/min																	
IE1-71M1-6	0.18	0.25	0.74	0.70	0.67	850	0.64	0.61	0.59	1020	56.0	0.66	2.0	1.9	4.0	2.0	52	10
IE1-71M2-6	0.25	0.37	0.95	0.90	0.86	850	0.82	0.78	0.75	1020	59.0	0.68	2.8	1.9	4.0	2.0	52	11
IE1-80M1-6	0.37	0.50	1.30	1.24	1.18	900	1.12	1.07	1.03	1080	62.0	0.70	4.0	1.9	4.7	2.0	54	15
IE1-80M2-6	0.55	0.75	1.79	1.70	1.62	900	1.55	1.48	1.42	1080	65.0	0.72	5.9	1.9	4.7	2.1	54	16
IE1-90S-6	0.75	1.00	2.29	2.18	2.07	910	1.98	1.89	1.81	1090	69.0	0.72	7.9	2.0	5.5	2.1	57	20
IE1-90L-6	1.1	1.5	3.18	3.02	2.88	910	2.75	2.63	2.52	1090	72.0	0.73	11.5	2.0	5.5	2.1	57	23
IE1-100L-6	1.5	2.0	4.00	3.80	3.62	930	3.45	3.30	3.17	1115	76.0	0.75	15.6	2.0	5.5	2.1	61	30
IE1-112M-6	2.2	3.0	5.57	5.29	5.04	940	4.81	4.60	4.41	1125	79.0	0.76	22.5	2.0	6.5	2.1	65	39
IE1-132S-6	3	4.0	7.40	7.03	6.70	960	6.39	6.11	5.86	1150	81.0	0.76	29.8	2.1	6.5	2.1	69	55
IE1-132M1-6	4	5.5	9.75	9.26	8.82	960	8.42	8.05	7.72	1150	82.0	0.76	39.8	2.1	6.5	2.1	69	68
IE1-132M2-6	5.5	7.5	12.9	12.3	11.7	960	11.1	10.7	10.2	1150	84.0	0.77	54.4	2.1	6.5	2.1	69	73
IE1-160M-6	7.5	10.0	17.2	16.3	15.6	970	14.9	14.2	13.6	1160	86.0	0.77	73.8	2.0	6.5	2.1	73	104
IE1-160L-6	11	15	24.5	23.3	22.2	970	21.2	20.2	19.4	1160	87.5	0.78	108.3	2.0	6.5	2.1	73	126
IE1-180L-6	15	20	31.6	30.0	28.6	970	27.3	26.1	25.0	1160	89.0	0.81	147.7	2.0	7.0	2.1	73	168
IE1-200L1-6	18.5	25	38.6	36.7	34.9	975	33.3	31.9	30.6	1170	90.0	0.81	180.3	2.1	7.0	2.1	76	215
IE1-200L2-6	22	30	44.7	42.5	40.4	975	38.6	36.9	35.4	1170	90.0	0.83	214.4	2.1	7.0	2.1	76	238
IE1-225M-6	30	40	59.3	56.3	53.7	980	51.2	49.0	47.0	1175	91.5	0.84	292.3	2.0	7.0	2.1	76	280
IE1-250M-6	37	50	71.1	67.6	64.3	980	61.4	58.7	56.3	1175	92.0	0.86	360.6	2.1	7.0	2.1	78	350
IE1-280S-6	45	60	85.9	81.6	77.7	980	74.2	71.0	68.0	1175	92.5	0.86	438.5	2.1	7.0	2.0	80	463
IE1-280M-6	55	75	104.7	99.5	94.7	980	90.4	86.5	82.9	1175	92.8	0.86	536.0	2.1	7.0	2.0	80	508
IE1-315S-6	75	100	141.7	134.6	128.2	985	122.4	117.1	112.2	1180	93.5	0.86	727.2	2.0	7.0	2.0	85	860
IE1-315M-6	90	120	169.5	161.0	153.4	985	146.4	140.0	134.2	1180	93.8	0.86	872.6	2.0	7.0	2.0	85	980
IE1-315L1-6	110	150	206.7	196.4	187.0	985	178.5	170.8	163.6	1180	94.0	0.86	1066.5	2.0	6.7	2.0	85	1060
IE1-315L2-6	132	180	244.7	232.5	221.4	985	211.3	202.1	193.7	1180	94.2	0.87	1279.8	2.0	6.7	2.0	85	1135
IE1-355M1-6	160	220	292.3	277.7	264.5	990	252.4	241.5	231.4	1185	94.5	0.88	1543.4	1.9	6.7	2.0	92	1480
IE1-355M2-6	200	270	365.4	347.1	330.6	990	315.6	301.9	289.3	1185	94.7	0.88	1929.3	1.9	6.7	2.0	92	1640
IE1-355L-6	250	340	456.8	434.0	413.3	990	394.5	377.4	361.6	1185	94.9	0.88	2411.6	1.9	6.7	2.0	92	1810

IE1 PERFORMANCE DATA

Type No.	Rated output (kW)	HP	Rated current IFL 380V A	Rated current IFL 400V A	Rated current IFL 420V A	Rated speed (r/min)	Rated current IFL 440V A	Rated current IFL 460V A	Rated current IFL 480V A	Rated speed (r/min)	EFF %	Power factor cos φ	Rated Torque N.m	Start Torque Rated Torque TST/TFL	Start Torque Rated Torque IST/IFL	Max Torque Rated Torque TM/TFL	Noise level LW dB(A)	Weight (Kg)
IE1			380~420V/50Hz				440~480V/60Hz											
	Synchronous speed 750r/min																	
IE1-80M1-8	0.18	0.25	0.88	0.84	0.80	650	0.76	0.73	0.70	780	51.0	0.61	2.7	1.8	3.3	1.9	52	15
IE1-80M2-8	0.25	0.37	1.15	1.09	1.04	650	0.99	0.95	0.91	780	54.0	0.61	3.7	1.8	3.3	1.9	52	16
IE1-90S-8	0.37	0.50	1.49	1.42	1.35	660	1.29	1.23	1.18	790	62.0	0.61	5.3	1.8	4.0	1.9	56	20
IE1-90L-8	0.55	0.75	2.17	2.06	1.96	660	1.87	1.79	1.72	790	63.0	0.61	7.8	1.8	4.0	2.0	56	24
IE1-100L1-8	0.75	1.00	2.40	2.28	2.17	690	2.07	1.98	1.90	825	71.0	0.67	10.5	1.8	4.0	2.0	59	28
IE1-100L2-8	1.1	1.5	3.32	3.15	3.00	690	2.87	2.74	2.63	825	73.0	0.69	15.4	1.8	5.0	2.0	59	30
IE1-112M-8	1.5	2.0	4.40	4.18	3.98	700	3.80	3.63	3.48	840	75.0	0.69	20.8	1.8	5.0	2.0	61	38
IE1-132S-8	2.2	3.0	6.04	5.74	5.46	710	5.22	4.99	4.78	850	78.0	0.71	29.8	1.8	6.0	2.0	64	54
IE1-132M-8	3	4.0	7.90	7.51	7.15	710	6.82	6.53	6.25	850	79.0	0.73	40.6	1.8	6.0	2.0	64	63
IE1-160M1-8	4	5.5	10.3	9.79	9.32	720	8.90	8.51	8.15	860	81.0	0.73	53.1	1.9	6.0	2.0	68	91
IE1-160M2-8	5.5	7.5	13.6	12.9	12.3	720	11.8	11.2	10.8	860	83.0	0.74	73.0	2.0	6.0	2.0	68	103
IE1-160L-8	7.5	10.0	17.8	16.9	16.1	720	15.4	14.7	14.1	860	85.5	0.75	99.5	2.0	6.0	2.0	68	128
IE1-180L-8	11	15	25.1	23.9	22.7	730	21.7	20.7	19.9	875	87.5	0.76	143.9	2.0	6.6	2.0	70	165
IE1-200L-8	15	20	34.1	32.4	30.9	730	29.5	28.2	27.0	875	88.0	0.76	196.2	2.0	6.6	2.0	73	224
IE1-225S-8	18.5	25	41.1	39.1	37.2	730	35.5	34.0	32.5	875	90.0	0.76	242.0	1.9	6.6	2.0	73	255
IE1-225M-8	22	30	47.4	45.0	42.9	730	40.9	39.2	37.5	875	90.5	0.78	287.8	1.9	6.6	2.0	73	292
IE1-250M-8	30	40	63.4	60.2	57.4	735	54.8	52.4	50.2	880	91.0	0.79	389.8	1.9	6.6	2.0	75	368
IE1-280S-8	37	50	77.8	73.9	70.4	735	67.2	64.3	61.6	880	91.5	0.79	480.7	1.9	6.6	2.0	76	475
IE1-280M-8	45	60	94.1	89.4	85.1	735	81.3	77.7	74.5	880	92.0	0.79	584.7	1.9	6.6	2.0	76	527
IE1-315S-8	55	75	111.2	105.6	100.6	735	96.0	91.9	88.0	880	92.8	0.81	714.6	1.8	6.6	2.0	82	840
IE1-315M-8	75	100	151.3	143.7	136.9	735	130.7	125.0	119.8	880	93.0	0.81	974.5	1.8	6.6	2.0	82	1020
IE1-315L1-8	90	120	177.8	168.9	160.9	740	153.6	146.9	140.8	885	93.8	0.82	1169.4	1.8	6.6	2.0	82	1100
IE1-315L2-8	110	150	216.8	206.0	196.2	740	187.2	179.1	171.6	885	94.0	0.82	1429.3	1.8	6.4	2.0	82	1180
IE1-355M1-8	132	180	261.0	248.0	236.1	740	225.4	215.6	206.6	885	93.7	0.82	1703.5	1.8	6.4	2.0	90	1610
IE1-355M2-8	160	220	314.7	299.0	284.7	740	271.8	260.0	249.1	885	94.2	0.82	2064.9	1.8	6.4	2.0	90	1700
IE1-355L-8	200	270	387.4	368.0	350.5	740	334.6	320.0	306.7	885	94.5	0.83	2581.1	1.8	6.4	2.0	90	1850
Synchronous speed 600r/min																		
IE1-315S-10	45	60	99.6	94.6	90.1	590	86.0	82.3	78.9	705	91.5	0.75	728.4	1.5	6.2	2.0	82	830
IE1-315M-10	55	75	121.1	115.1	109.6	590	104.6	100.0	95.9	705	92.0	0.75	890.3	1.5	6.2	2.0	82	960
IE1-315L1-10	75	100	162.1	154.0	146.7	590	140.0	133.9	128.3	705	92.5	0.76	1214.0	1.5	6.2	2.0	82	1080
IE1-315L2-10	90	120	191.0	181.5	172.8	590	165.0	157.8	151.2	705	93.0	0.77	1456.8	1.5	6.2	2.0	82	1150
IE1-355M1-10	110	150	229.9	218.4	208.0	590	198.6	189.9	182.0	705	93.2	0.78	1780.5	1.3	6.0	2.0	90	1565
IE1-355M2-10	132	180	275.0	261.3	248.8	590	237.5	227.2	217.7	705	93.5	0.78	2136.6	1.3	6.0	2.0	90	1685
IE1-355L-10	160	220	333.3	316.6	301.6	590	287.9	275.3	263.9	705	93.5	0.78	2589.8	1.3	6.0	2.0	90	1830



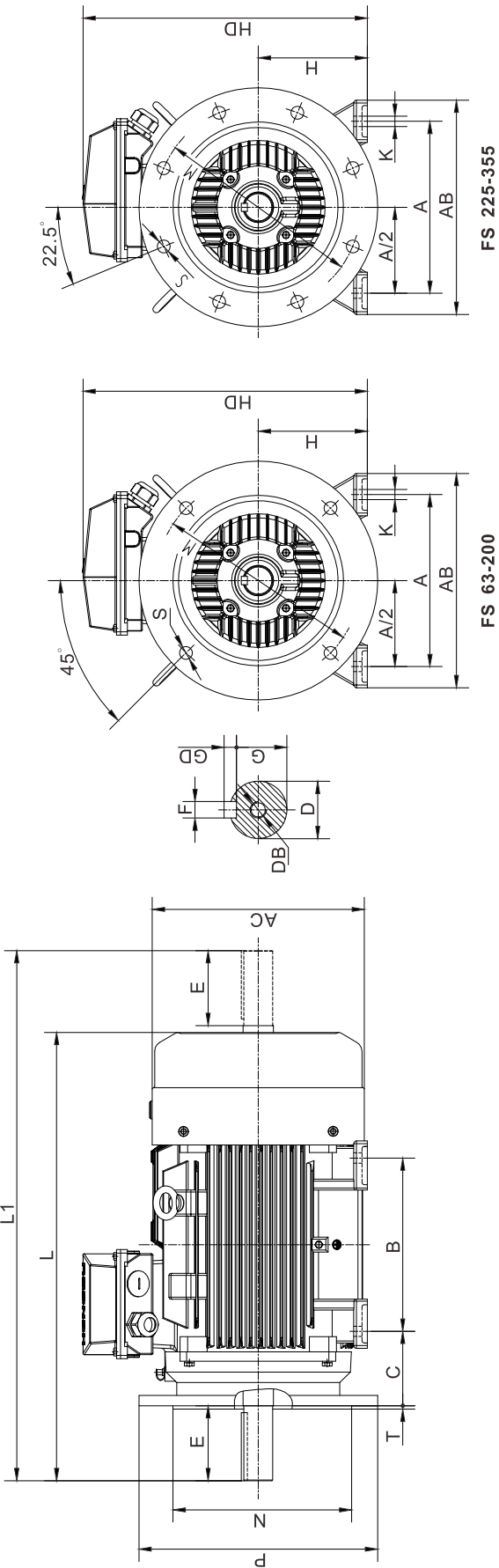
DIMENSIONS MOUNT B3



FS 63-355
NOTES: FS 63-90 motor without eyebolts

Frame size		Poles		Fixing Measurement												Figure size						
A	A/2	B	C	D	E	F	G	H	K	K	DB	GD	AB	AC	HD	L	L1					
63M	2, 4	100	50	80	40	11	+0.008 -0.003	23	6	0	8.5	63	7	ϕ0.5 (M)	M4	4	135	130	180	230	255	
71M	2, 4, 6	112	56	90	45	14		30		0	11	71			M5	5	150	145	195	255	290	
80M		125	62.5	100	50	19		40			15.5	80			M6	6	165	175	220	295	340	
90S		140	70	100	56	24	+0.009 -0.004	50	8		20	99	10		M8		7	180	195	250	320	375
90L		160	80	140	63	28		60			24	100	12		ϕ1.0 (M)			205	215	270	385	450
100L		190	95	140	70							112					230	240	300	400	465	
112M		216	108	140	89	38		80	10		33	132	15		M10		270	275	345	470	555	
132S	2, 4, 6, 8	254	127	210	108	42	+0.018 +0.012		12		37	160			M12		8	320	330	420	615	730
132M		279	139.5	241	121	48		110	14		42.5	180					355	380	455	700	815	
160M		318	159	305	133	55			16		49	200	19		ϕ1.5 (M)		10	395	420	505	770	885
160L				286	149	60		140	18	0	53	225			M16		11				815	960
180M	4, 8	356	178	311		55	-0.043		16		49						435	470	560	820	935	
180L	2																			845	990	
200L	4, 6, 8	406	203	349	168	60			18		53	250	24				11	490	510	615	910	1055
225S						65		140			58										1055	
225M	2					75			20	0	67.5	280			M20	12					1130	
250M	4, 6, 8	457	228.5	419	190	65	+0.030 +0.013		18	0	58				M16	11	550	580	680			
280S						75			20	0	67.5				M20	12				1035	1180	
280M	2					65			18	0	-0.043				M16	11						
315S	4, 6, 8, 10	508	254	406	216	80		170	22	0	58	315			M20	14						
315M	2					80		140	18	0	71				M16	11	635	645	800	1270	1425	
315L	4, 6, 8, 10	610	305	457	254	80		170	22	0	71				M20	14				1300	1485	
355M	2					65		140	18	0	58				M16	11				1270	1425	
355L	4, 6, 8, 10	610	305	560	254	75	+0.035 +0.013	170	25	0	86	355			M20	14				1300	1485	
	2					75		170	22	0	71				M16	11				1270	1425	
	4, 6, 8, 10					80		170	22	0	71				M20	14				1300	1485	
	2					95	+0.035 +0.013	170	25	0	86				M24	12	730	710	880	1500	1650	
	4, 6, 8, 10					95		170	25	0	86				M24	14				1500	1650	

DIMENSIONS MOUNT **B35**



FS 63-355
NOTES: FS 63-90 motor without eyebolts

Frame Poles		Fixing Measurement																			Figure size					
size		A	A/2	B	C	D	E	F	G	H	K	M	N	P	R	S	T	Flange holes	DB	GD	AB	AC	HD	L	L1	
63M	2.4	100	50	80	40	11	23	4	8.5	63	7	115	95	+0.013	140		-0.360 0	3	4	M4	4	135	130	180	230	255
71M	2.4.6	112	56	90	45	14	30	5	11	71		130	110	-0.003	160		0		M5	5	150	145	195	255	290	
80M		125	62.5	100	50	19	40	6	15.5	80							3.5		M6	6	165	175	220	295	340	
90S																										
90L		140	70	100	56	24	50	8	20	90	10	165	130	+0.014 -0.011	200				M8	7	180	195	250	320	375	
100L		160	80	140	63		60		0	100		215	180		250		-0.430 0	4				205	215	270	385	450
112M	2.4.6.8	190	95	140	70	28				112	12										230	240	300	400	465	
132S					±2.0														4							
132M		216	108	178	89	38	80	10	33	132 -0.5		265	230		300				M10		270	275	345	470	555	
160M											+0.430 0									8						
160L		254	127	254	108	42		12	37	160	15			+0.018 -0.012	350				M12		320	330	420	670	785	
180M		279	139.5	241	121	48	110	14	42.5	180		300	250				0 -0.120				355	380	455	700	815	
180L				279							±3.0								9							
200L		318	159	305	133	55		16	49	200		350	300	±0.016	400						395	420	505	770	885	
225S	4.8			286		60	140	18	0	225	19									11						
225M	2	356	178	311	149	55	110	16	49			400	350	±0.018	450		-0.520 0	5			435	470	560	820	935	
250M	4.6.8					60			53	250									M16							
2		406	203	349	168			18												11	490	510	615	910	1055	
280S	2			368		65	140		58		24	500	450	±0.020	550											
280M	4.6.8	457	228.5		190	75	20	0	67.5	280									M20	12	550	580	680			
2				419		65	18	0	58										M16	11						
315S	2					75	20	0	67.5		+0.520 0								M20	12						
	4.6.8.10			406		65	18	0	58										M16	11						
315M	2	508	254		216	80	170	22	71	315 -1.0	28	600	550	±0.022	660				M20	14	635	645	800			
315L	4.6.8.10			508		80	140	18	58										M16	11						
2						80	170	22	71										M20	14						
355M	2			560		75	140	20	67.5										M20	12						
4.6.8.10		610	305		254	95	170	25	86	355		740	680	±0.025	800				M24	14	7300	710	880			
2				630		75	140	20	67.5										M20	12						
4.6.8.10						95	170	25	86										M24	14						

DAGER Worldwide Operations

Electric motor

Exclusive Distributor in Vietnam

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