



OptiMity-x 3-phase induction motors

IE2&IE3

Frame Size 80-355

Power Rating 0.75-355Kw

LEROY-SOMER[™]

Nidec
All for dreams

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OptiMity-X 3-phase induction motors

Overview

General Information

Leroy Somer OptiMity-X series general industries TEFC 3 phase asynchronous motors with efficiency level IE2&IE3. These motors have been designed to incorporate the latest IEC and European standards, and can satisfy most of industry's demands.

OptiMity-X is designed for DOL operation with continuous duty (S1).

OptiMity-X Standard Features

- Aluminum frame(SH<=160)and cast iron frame
- Standard painting color reference RAL6000
- Supply voltage 400V,frequency 50Hz
- The permitted tolerance of the voltage is $\pm 5\%$
- Efficiency level IE2&IE3
- Standard mounting construction according to IEC 60034-7: IMB3, IM B5, IM B35 and etc
- Top position of main terminal
- Regreasing device (frame size ≥ 250 as standard)
- Cooling method IC411
- Enclosure protection IP55
- Insulation/Thermal class F/B
- Vibration A
- Plastic cable gland
- Removable feet for Aluminum 80-132 frame

OptiMity-X Options

- Space heater
- Special painting color
- Special voltage
- Insulation class H
- Thermal protection PTC and PT100
- SKF/Regreasing device >180 frame size bearing
- Regreasing device
- Drip cover
- Main terminal box position(RH or LH)
- External earthing bolt
- Type test
- Cable glands
 - Brass
 - Stainless steel

Environmental

- Ambient temperature:-16°C ~ 40°C
- Altitude less than 1000 m
- Humidity $\leq 90\%$

For higher ambient temperatures and / or site altitudes higher than 1000 m above sea level, the motor should be derated. Please consult Leroy-Somer.

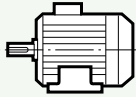
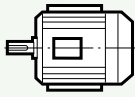
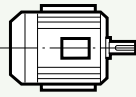
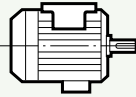
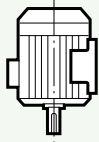
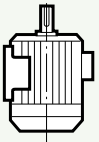
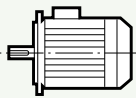
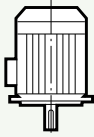
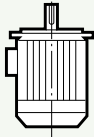
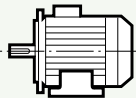
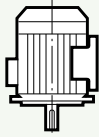
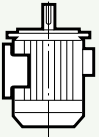
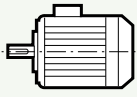
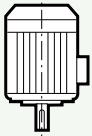
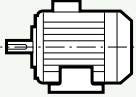
OptiMity-X definition		
Motors type	IE2	IE3
Aluminum motors	OPTA-X	OPTA-XP
Cast Iron motors	OPT-X	OPT-XP

OptiMity-X 3-phase induction motors

Overview

Construction

Mountings and Positions

Construction Type	Foot mounted motors					
Mounting Type	IMB3	IMB6	IMB7	IMB8	IMV5	IMV6
Diagram						
Construction Type	(FF) Flange mounted motors					
Mounting Type	IMB5	IMV1	IMV3	IMB35	IMV15	IMV36
Diagram						
Construction Type	(FT) Face mounted motors					
Mounting Type	IMB14		IMB18		IMB34	
Diagram						

Frame Size	Foot mounted motors			Secondary Mounting											
	B3	B5	B35	V1	V3	V5	V6	B6	B7	B8	V15	V36	B14	B34	V18
80-112	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
132-160	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
180-280	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-
315-355	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-

✓/available, -not available

OptiMity-X 3-phase induction motors

Overview

Construction

Cooling

Standard cooling method is self-ventilation motors with radial-flow fans (IC411 according to IEC 60034-6).

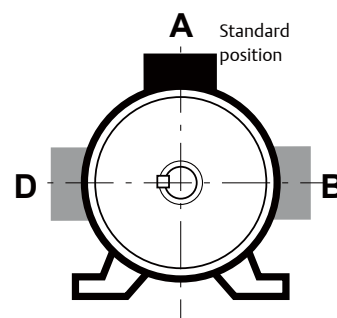
Terminal Box

Placed as standard on the top of the motor near the drive end, it is IP 55 protection and fitted with plastic cable glands.

Frame Size OPTAX	Plastic Cable gland (standard)
80 ~ 132	1 * M20 * 1.5
160	2 * M30 * 1.5
Frame Size OPTX	Plastic Cable gland (standard)
80	1 * M24 * 1.5
90 ~ 100	1 * M24 * 1.5
112 ~ 132	2 * M32 * 1.5
160 ~ 180	2 * M36 * 2
200 ~ 225	2 * M48 * 2
250 ~ 280	2 * M63 * 1.5
315	2 * M63 * 1.5
355	2 * M63 * 1.5

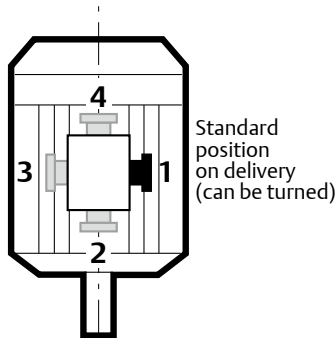
If required, the terminal box may be fitted right or left side of the motor (seen from the drive end) .

Positions of the terminal box in relation to the drive end (motor in IM 1001 position)



The standard position of cable entry is on the right, seen from the drive end but, owing to the symmetrical construction of the box, it can usually be placed in any of the 4 directions as below picture:

Positions of cable entry in relation to the drive end



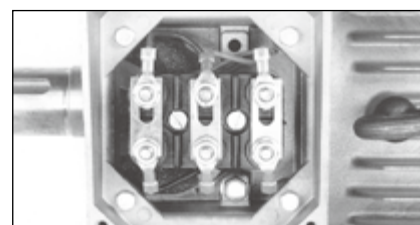
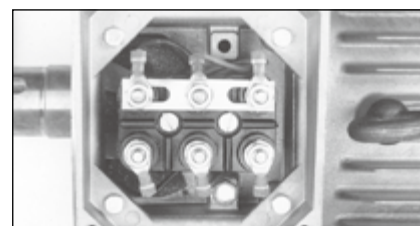
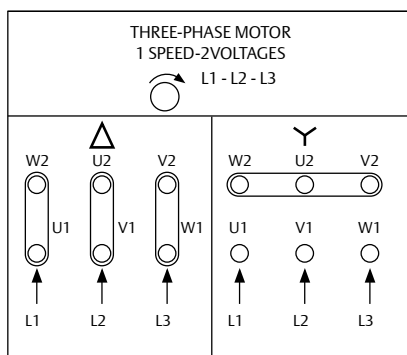
Positions 2 not recommended (impossible on standard (FF) flange mounted motor)

Wiring Diagram

All standard motors are supplied with a wiring diagram in the terminal box.

Earth Terminal

This is situated inside the terminal box. Consisting of a threaded stud with a hexagonal nut, it is used to connect cables with cross-sections at least as large as the cross-section of the phase conductors. It is indicated by the sign: (\perp) in the terminal box. On request, a second earth terminal can be fitted on one or both of the feet.



OptiMity-X 3-phase induction motors

Overview

Construction

Bearing

OptiMity series motors are equipped with the ball bearing as standard (sealed type or regreasable type).

For frame size 80-225mm sealed bearing as standard. For frame size 250-355mm regreasable bearing as standard, with regrease devise.

If required, frame size 160-225mm regreasable bearing and regrease device as option.

Bearing assignment as below table:

Type	DE	NDE
OPTX/OPTAX-80	6204-2RZ	6204-2RZ
OPTX/OPTAX-90	6205-2RZ	6205-2RZ
OPTX/OPTAX-100	6206-2RZ	6206-2RZ
OPTX/OPTAX-112	6206-2RZ	6206-2RZ
OPTAX-132	6308-2RZ	6308-2RZ
OPTAX-160	6309-2RZ	6209-2RZ
OPTX-132	6208-2RZ	6208-2RZ
OPTX-160	6309-2RZ	6309-2RZ
OPTX-180	6311-2RZ	6311-2RZ
OPTX-200	6312-2RZ	6312-2RZ
OPTX-225	6313-2RZ	6312-2RZ
OPTX-250-2	6313	6313
OPTX-250-4,6	6314	6313
OPTX-280-2	6314	6314
OPTX-280-4,6	6317	6314
OPTX-315-2	6317	6317
OPTX-315-4,6	NU319	6319
OPTX-355-2	6318	6316
OPTX-355-4,6	6322	6316

Bearing Re-greasing

Re-greasing interval and quantity of grease as below table:

Frame Size	Quantity of Grease(g)	Re-greasing Interval(h)		
		3000(r/min)	1500(r/min)	1000(r/min)
160,180	20	4200	7000	9000
200,225	25	3100	6500	8500
250,280	35	2000	6000	8000
315	50	2000	5500	7500
355	60	3700(35g)	8300	13800

OptiMity-X 3-phase induction motors

Overview

Operation

The safety speed for Squirrel cage induction motor

The chart below showed the safety speed for the single speed motors: the voltage below 1000V, frame size up to 315

The highest safety speed for single speed motors

the unit rpm

Frame size	2P	4P	6P
≤100	5200	3600	2400
112	5200	3600	2400
132	4500	2700	2400
160	4500	2700	2400
180	4500	2700	2400
200	4500	2300	1800
225	3600	2300	1800
250	3600	2300	1800
280	3600	2300	1800
315	3600	2300	1800

Note: according to GB3836, the running speed can be lower than the listed above, These values are defined as a maximum for the applications

OptiMity-X 3-phase induction motors

Overview

Operation

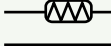
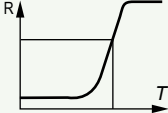
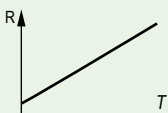
Thermal Protection

Motors are protected by a manual or automatic overcurrent relay, placed between the isolating switch and the motor. This relay may in turn be protected by fuses. These protection devices provide total protection of the motor against non-

transient overloads. If a shorter reaction time is required, if you want to detect transient overloads, or if you wish to monitor temperature rises at "hot spots" in the motor or at strategic points in the installation for maintenance purposes, it would be advisable to install heat sensors

at sensitive points. The various types are shown in the table below, with a description of each. It must be emphasized that under no circumstances can these sensors be used to carry out direct regulation of the motor operating cycles.

Built-in Indirect Thermal Protection

Type	Operating principle	Operating curve	Breaking capacity(A)	Protection provided	Mounting Number of devices*
Positive temperature coefficient thermistor PTC	Non-linear variable resistor, indirectly heated 		0	General monitoring for transient overloads	Mounted with associated relay in control circuit 3 in series
Platinum temperature sensor PT 100	Linear variable resistor indirectly heated		0	High accuracy continuous surveillance of key hot spots	Mounted in control boards with associated reading equipment (or recorder) 1 per hot spot

- NRT: nominal running temperature

- The NRTs are chosen according to the position of the sensor in the motor and the temperature rise class.

* The number of devices relates to the winding protection.

Fitting Thermal Protection

- PTC, with relay, in the control circuits
- PT 100, with reading equipment or recorder, in the installation control panel for continuous surveillance

Alarm and Early Warning

All protective equipment can be backed up by another type of protection (with different NRTs): the first device will then act as an early warning (light or sound signals given without shutting down the power circuits), and the second device will be the alarm (shutting down the power circuits)

Bearing Protection

OptiMity-X motors bearing has no protection as standard. The bearing is recommended to be protected for some severe application. The bearing is protected through thermometers screwed into the bearing plates of motor driven end (DE) and non-drive-end (NDE). The wires are routed through the main connection box.

Anti-condensation Protection

Motors whose windings are at risk of condensation due to the climatic conditions, e.g. inactive motors in humid atmospheres or motors that are subjected to widely fluctuating temperatures can be equipped with anti-condensation heaters.

Overview

Operation

Starting Method

The two essential parameters for starting cage induction motors are:

- starting torque
- starting current

These two parameters and the resistive torque determine the starting time.

These three characteristics arise from the construction of cage induction motors. Depending on the driven load, it may be necessary to adjust these values to avoid torque surges on the load or current surges in the supply. There are essentially five different types of supply, which are:

- D.O.L. starting
- star/delta starting
- soft starting with auto-transformer
- soft starting with resistors
- electronic starting

The tables on the next few pages give the electrical outline diagrams, the effect on the characteristic curves, and a comparison of the respective advantages of each mode.

Motors with Associated Electronics

Electronic starting modes control the voltage at the motor terminals throughout the entire starting phase, giving very gradual smooth starting.

DIGISTART D2 Electronic Starter

This simple, compact electronic starter enables three-phase induction motors to be started smoothly by controlling their acceleration. It incorporates motor protection.



- **18 to 200 A Range**
- **Integrated by-pass:** ease of wiring

Simplicity and speed of setup

All settings configured with just seven selector switches

- **Flexibility**

- Mains supply voltages
200-440 VAC & 200-575 VAC

- **Starting and Stopping Modes:**

- Current limit
- Current ramp
- Deceleration control
- Communication
- Modbus, DeviceNet, Profibus, USB, display console
- Management of pumping functions

DIGISTART D3 Electronic Starter

Using the latest electronic control technologies to manage transient phases, the DIGISTART D3 range combines simplicity and user-friendliness while offering the user a high-performance, communicating electronic starter, and can achieve substantial energy savings.



- Range from 23 to 1600 A/400 V or 690 V
- Integrated bypass up to 1000 A:
- Compact design Up to 60% space saving.
- Energy saving.
- Reduced installation costs.

- **Advanced Control**

- Starting and stopping adapt to the load automatically.
- Automatic parameter optimisation by gradually learning the types of start.
- Special deceleration curve for pumping applications which derives from more than 15 years of Leroy-Somer's experience and expertise.

- **High Availability**

- Able to operate with only two power components operational.
- Protection devices can be disabled to implement forced run mode (smoke extraction, fire pump, etc).

- **Total Protection**

- Continuous thermal modelling for maximum motor protection (even in the event of a power cut).
- Trips on configurable power thresholds.
- Control of phase current imbalance.
- Monitoring of motor temperatures and the environment with PTC or PT 100.

- **As an Option**

- Installation trips in the event of an earth

fault

- Protection against mains over- and undervoltages
- Connection to "Δ" motor (6-wire)
- Starter size at least one rating lower
- Automatic detection of motor connection
- Ideal for replacing Y/Δ starters

- **Communication**

Modbus RTU, DeviceNet, Profibus, USB

- **Simplicity of Setup**

- 3 parameter-setting levels
- Preset configurations for pumps, fans, compressors, etc
- Standard: access to the main parameters
- Advanced menu: access to all data
- Storage
- Time-stamped log of trips
- Energy consumption and operating conditions
- Latest modifications
- Simulate operation by forcing control
- Display the state of the inputs/outputs
- Counters: running time, number of starts, etc.

OptiMity-X 3-phase induction motors

Overview

Operation

Mode	Outline diagram	Characteristic curves	Number of steps	Starting torque	Starting current	Advantages
D.O.L.			1	M_D	I_D	<ul style="list-style-type: none"> Simplicity of the equipment High torque Minimum starting time
Star-Delta			2	$M_D/3$	$I_D/3$	<ul style="list-style-type: none"> Starting current divided by 3 Simple equipment 3 contactors including 1 two-pole

OptiMity-X 3-phase induction motors

Overview

Operation

Mode	Outline diagram	Characteristic curves	Number of steps	Starting torque	Starting current	Advantages
Soft starting with autotransformer			$n \geq 3$	$K^2 \cdot M_D$	$K^2 \cdot I_D$	<ul style="list-style-type: none"> Can be used to select the torque Current reduction proportional to that for the torque No power cut-off
Soft starting with resistors			n	$K^2 \cdot M_D$	$K \cdot I_D$	<ul style="list-style-type: none"> Can be used to select the torque or the current No power cut-off Modest additional cost (1 contactor per step)

OptiMity-X 3-phase induction motors

Overview

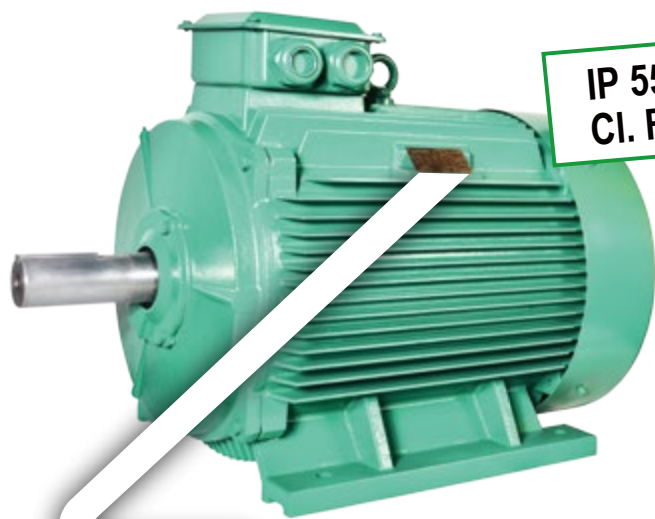
Operation

Mode	Outline diagram	Characteristic curves	Number of steps	Starting torque	Starting current	Advantages
DIGISTART D2 & D3				$K^2 M_D$	$K I_D$	<ul style="list-style-type: none"> Adjustable on site Choice of torque and current No power cut-off Smooth starting Compact size No maintenance High number of starts Digital Integrated motor and machine protection Serial link
DIGISTART D3 mode "6-wire"				$K^2 M_D$	$K I_D$	<ul style="list-style-type: none"> Same advantages as the above DIGISTART Current reduced by 35% Suitable for retrofitting on installations Y-D With or without bypass

OptiMity-X 3-phase induction motors

Overview

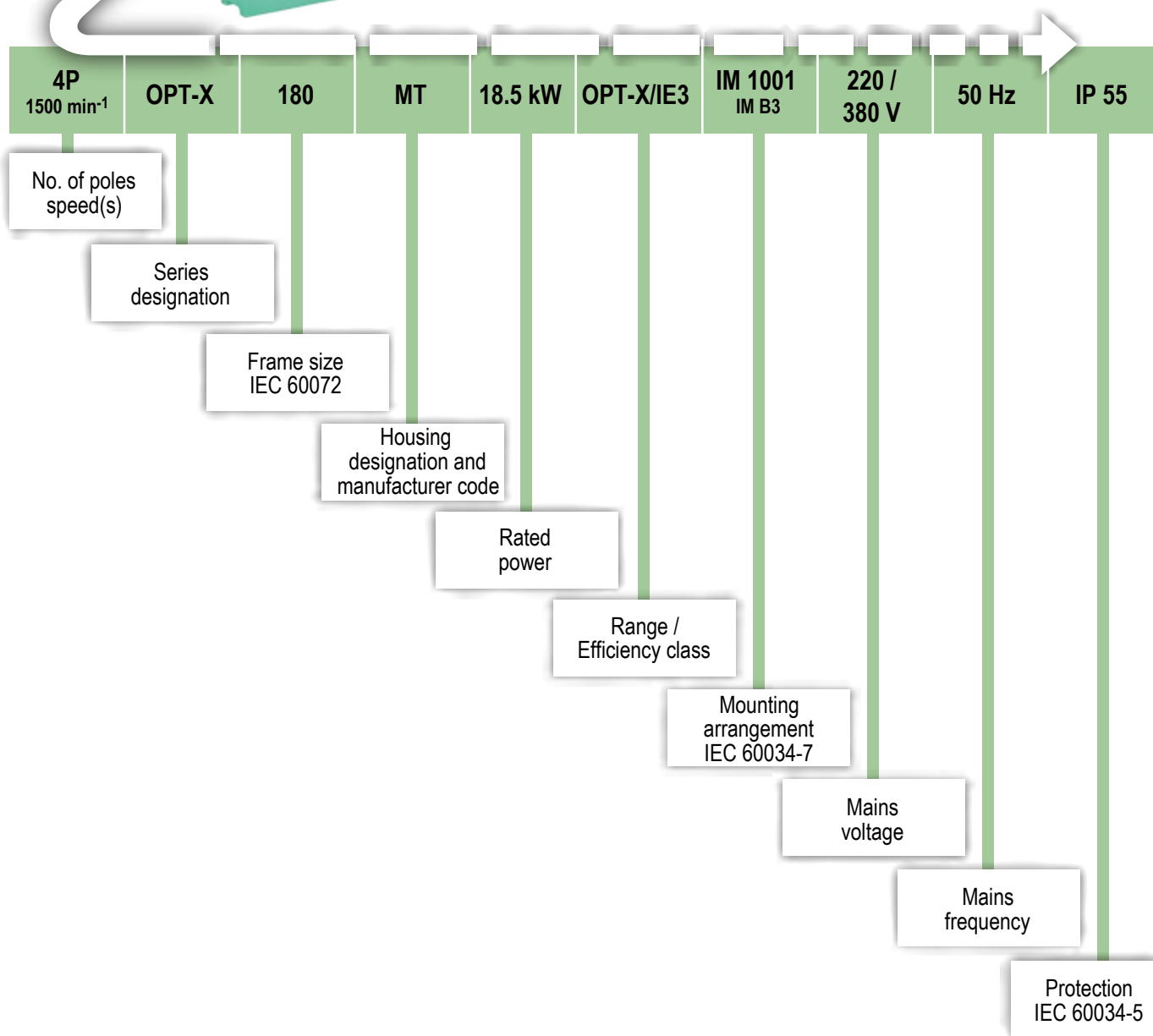
Description



IP 55
Cl. F - ΔT 80 K

The complete motor **reference** described below will enable you to order the desired **equipment**.

The selection method consists of following the terms in the designation.



OptiMity-X 3-phase induction motors

Overview

Description

Nameplate

OPTAX

		MOT: 3 ~ OPTX315S-2P B3						
IP 55		IK 08	cl. F	-20~40°C	S 1	%	d/h	880 kg
V	Hz	r/min	kW	cos	A	IE 2		
▲ 380	50	2980	110	0.91	195	94.3 %		
DE		6317 C3	50 cm ³	2000	H 50/60Hz	IEC60034-1		
NDE		6317 C3	50 cm ³	2000	H 50/60Hz			

OPTX

		MOT: 3 ~ OPTX315S-2P B3						
IP 55		IK 08	cl. F	-20~40°C	S 1	%	d/h	900 kg
V	Hz	r/min	kW	cos	A	IE 3		
▲ 380	50	2980	110	0.921	190.7	95.2 %		
DE		6317 C3	50 cm ³	2000	H 50/60Hz	IEC60034-1		
NDE		6317 C3	50 cm ³	2000	H 50/60Hz			

MOT: Code No.
 SN: Serial No.
 IP&IK: Protection Level
 cl: Insulation Class
 °C: Ambient operating temperature
 S: Duty-Duty factor
 V: Supply Voltage
 Hz: Supply frequency
 r/min: Rated Speed

kW: Rated Power
 cos: Power Factor
 A: Rated Current
 IE: Efficiency Level
 %: Efficiency Value
 DE: Drive End Bearing
 NDE: Non Drive End Bearing
 cm³: Quantity of Grease at Each Regreasing (g)
 H: Regreasing Interval(hours)

Legal mark of conformity of product to the requirements of European Directives

The motor scope: 2P motor: Power=<2.2kW 4P motor: power =<1.1kW 6P motor: power =<0.75kW

OptiMity-X 3-phase induction motors

Electrical and Mechanical Characteristics

Electrical and Mechanical Data IE2

Type	380V 50Hz										400V/50Hz		415V/50Hz	
	Rated Power	Rated Current	Rated Speed	Rated Torque	Starting Torque /Rated Torque	Starting Current /Rated Current	Max. Torque /Rated Torque	Efficiency	Power Factor	Weight	Rated Current	Rated Speed	Rated Current	Rated Speed
	Pn	In	r/min	Mn	Md/Mn	Id/In	Mm/Mn	%	cos ϕ	IM B3	In	r/min	In	r/min
2P														
OPTA-X 80M1-2P	0.75	1.8	2820	2.5	2.2	6.1	2.3	77.4	0.83	11	1.7	2820	1.6	2820
OPTA-X 80M2-2P	1.1	2.5	2825	3.7	2.2	7	2.3	79.6	0.84	13	2.4	2825	2.3	2825
OPTA-X 90S-2P	1.5	3.3	2830	5.1	2.2	7	2.3	81.3	0.84	18	3.2	2830	3.1	2830
OPTA-X 90L-2P	2.2	4.7	2835	7.4	2.2	7	2.3	83.2	0.85	21	4.5	2835	4.3	2835
OPTA-X 100L-2P	3	6.2	2850	10.1	2.2	7.5	2.3	84.6	0.87	25	5.9	2850	5.7	2850
OPTA-X 112M-2P	4	8.1	2885	13.2	2.2	7.5	2.3	85.8	0.88	33	7.7	2885	7.4	2885
OPTA-X 132S1-2P	5.5	10.9	2900	18.1	2.2	7.5	2.3	87	0.88	51	10.4	2900	10.0	2900
OPTA-X 132S2-2P	7.5	14.7	2900	24.7	2.2	7.5	2.3	88.1	0.88	62	14.0	2900	13.5	2900
OPTA-X 160M1-2P	11	21.0	2930	35.9	2.2	7.5	2.3	89.4	0.89	107	20.0	2930	19.2	2930
OPTA-X160M2-2P	15	28.4	2930	48.9	2.2	7.5	2.3	90.3	0.89	112	27.0	2930	26.0	2930
OPTA-X 160L-2P	18.5	34.4	2930	60.3	2.2	7.5	2.3	90.9	0.90	132	33.0	2930	31.5	2930
OPT-X 80M1-2P	0.75	1.8	2820	2.5	2.2	7	2.3	77.4	0.83	15	1.7	2820	1.6	2820
OPT-X 80M2-2P	1.1	2.5	2825	3.7	2.2	7.3	2.3	79.6	0.84	16	2.4	2825	2.3	2825
OPT-X 90S-2P	1.5	3.3	2830	5.1	2.2	7.6	2.3	81.3	0.84	21	3.2	2830	3.1	2830
OPT-X 90L-2P	2.2	4.7	2835	7.4	2.2	7.6	2.3	83.2	0.85	24	4.5	2835	4.3	2835
OPT-X 100L-2P	3	6.2	2850	10.1	2.2	7.8	2.3	84.6	0.87	35	5.9	2850	5.7	2850
OPT-X 112M-2P	4	8.1	2885	13.2	2.2	8.3	2.3	85.8	0.88	40	7.7	2885	7.4	2885
OPT-X 132S1-2P	5.5	10.9	2900	18.1	2	8.3	2.3	87	0.88	59	10.4	2900	10.0	2900
OPT-X 132S2-2P	7.5	14.7	2900	24.7	2	7.9	2.3	88.1	0.88	62	14.0	2900	13.5	2900
OPT-X 160M1-2P	11	21.0	2930	35.9	2	8.1	2.3	89.4	0.89	117	20.0	2930	19.2	2930
OPT-X 160M2-2P	15	28.4	2930	48.9	2	8.1	2.3	90.3	0.89	127	26.9	2930	26.0	2930
OPT-X 160L-2P	18.5	34.4	2930	60.3	2	8.2	2.3	90.9	0.90	141	32.6	2930	31.5	2930
OPT-X 180M-2P	22	40.7	2945	71.3	2	8.2	2.3	91.3	0.90	166	38.6	2945	37.2	2945
OPT-X 200L1-2P	30	55.1	2960	96.8	2	7.6	2.3	92	0.90	242	52.3	2960	50.4	2960
OPT-X 200L2-2P	37	67.5	2960	119	2	7.6	2.3	92.5	0.90	261	64.2	2960	61.8	2960
OPT-X 225M-2P	45	81.8	2960	145	2	7.7	2.3	92.9	0.90	313	77.7	2960	74.9	2960
OPT-X 250M-2P	55	100.0	2965	177	2	7.1	2.3	93.2	0.90	392	94.6	2965	91.2	2965
OPT-X 280S-2P	75	135.0	2975	241	1.8	7.1	2.3	93.8	0.90	552	128.0	2975	124.0	2975
OPT-X 280M-2P	90	160.0	2975	289	1.8	7.1	2.3	94.1	0.91	559	152.0	2975	146.0	2975
OPT-X 315S-2P	110	195.0	2980	353	1.8	7.1	2.3	94.3	0.91	945	185.0	2980	178.0	2980
OPT-X 315M-2P	132	233.0	2978	423	1.8	7.1	2.3	94.6	0.91	980	221.0	2978	213.0	2978
OPT-X 315L1-2P	160	279.0	2978	513	1.8	7.2	2.3	94.8	0.92	1040	265.0	2978	255.0	2978
OPT-X 315L2-2P	200	348.0	2978	641	1.8	7.2	2.2	95	0.92	1135	330.0	2978	318.0	2978
OPT-X 355L1-2P	250	435.0	2980	801	2.48	7.27	2.8	95	0.92	1577	413.0	2980	398.0	2980
OPT-X 355L2-2P	315	548.0	2980	1009	2.68	7.59	3.1	95	0.92	1750	520.0	2980	501.0	2980
OPT-X 355L3-2P	355	620.0	2978	1138	2.84	7.88	2.8	96.1	0.91	1787	595	2981	583	2982
OPT-X 355L3-2P	355	620.0	2978	1138	2.84	7.88	2.8	96.1	0.91	1787	595	2981	583	2982
4P														
OPTA-X 80M1-4P	0.55	1.5	1385	3.8	2.3	6	2.3	74	0.75	13	1.4	1425	1.4	1385
OPTA-X 80M2-4P	0.75	1.9	1390	5.2	2.3	6.6	2.3	80	0.76	14	1.8	1430	1.7	1390
OPTA-X 90S-4P	1.1	2.7	1385	7.6	2.3	6.8	2.3	81	0.77	20	2.5	1415	2.4	1385
OPTA-X 90L-4P	1.5	3.5	1385	10.3	2.3	7	2.3	83	0.79	24	3.3	1415	3.2	1385
OPTA-X 100L1-4P	2.2	4.9	1410	14.9	2.3	7.6	2.3	84	0.81	27	4.7	1430	4.5	1410
OPTA-X 100L2-4P	3	6.5	1410	20.3	2.3	7.6	2.3	86	0.82	33	6.2	1430	6.0	1410
OPTA-X 112M-4P	4	8.6	1430	26.7	2.2	7.8	2.3	87	0.82	43	8.1	1450	7.8	1430
OPTA-X 132S-4P	5.5	11.5	1455	36.1	2	7.9	2.3	88	0.83	54	10.9	1465	10.5	1455
OPTA-X 132M-4P	7.5	15.3	1455	49.2	2	7.5	2.3	89	0.84	63	14.5	1465	14.0	1455
OPTA-X 160M-4P	11	22.2	1460	72	2	7.7	2.3	90	0.84	108	21.3	1470	20.5	1470
OPTA-X 160L-4P	15	29.6	1460	98.1	2	7.8	2.3	91	0.85	128	28.4	1470	27.4	1470
OPT-X 80M1-4P	0.55	1.5	1385	3.8	2.3	6	2.3	74	0.75	16	1.4	1425	1.4	1385
OPT-X 80M2-4P	0.75	1.9	1390	5.2	2.3	6.6	2.3	80	0.76	17	1.8	1430	1.7	1390
OPT-X 90S-4P	1.1	2.7	1385	7.6	2.3	6.8	2.3	81	0.77	22	2.5	1415	2.4	1385
OPT-X 90L-4P	1.5	3.5	1385	10.3	2.3	7	2.3	83	0.79	25	3.3	1415	3.2	1385
OPT-X 100L1-4P	2.2	4.9	1410	14.9	2.3	7.6	2.3	84	0.81	34	4.7	1430	4.5	1410
OPT-X 100L2-4P	3	6.5	1410	20.3	2.3	7.6	2.3	86	0.82	34	6.2	1430	6.0	1410
OPT-X 112M-4P	4	8.6	1430	26.7	2.2	7.8	2.3	87	0.82	45	8.1	1450	7.8	1430
OPT-X 132S-4P	5.5	11.5	1455	36.1	2	7.9	2.3	88	0.83	60	10.9	1465	10.5	1455
OPT-X 132M-4P	7.5	15.3	1455	49.2	2	7.5	2.3	89	0.84	74	14.5	1465	14.0	1455
OPT-X 160M-4P	11	22.2	1460	72	2	7.7	2.3	90	0.84	121	21.0	1470	20.3	1460
OPT-X 160L-4P	15	29.6	1460	98.1	2	7.8	2.3	91	0.85	135	28.1	1470	27.1	1460

OptiMity-X 3-phase induction motors

Electrical and Mechanical Characteristics

Electrical and Mechanical Data IE2

Type	380V 50Hz										400V/50Hz		415V/50Hz	
	Rated Power	Rated Current	Rated Speed	Rated Torque	Starting Torque /Rated Torque	Starting Current /Rated Current	Max. Torque /Rated Torque	Efficiency	Power Factor	Weight	Rated Current	Rated Speed	Rated Current	Rated Speed
	Pn	In	r/min	Mn	Md/Mn	Id/In	Mm/Mn	%	cos ϕ	IM B3	In	r/min	In	r/min
OPT-X 180M-4P	18.5	35.8	1470	120	2	7.8	2.3	91	0.86	163	34.0	1470	32.8	1470
OPT-X 180L-4P	22	42.4	1470	143	2	7.8	2.3	92	0.86	182	40.3	1465	38.9	1470
OPT-X 200L-4P	30	57.4	1470	195	2	7.3	2.3	92	0.86	253	54.6	1475	52.6	1470
OPT-X 225S-4P	37	69.7	1480	239	2	7.4	2.3	93	0.87	283	66.2	1480	63.8	1480
OPT-X 225M-4P	45	84.4	1480	290	2	7.4	2.3	93	0.87	313	80.2	1480	77.3	1480
OPT-X 250M-4P	55	103.0	1485	354	2	7.4	2.3	94	0.87	403	97.6	1485	94.1	1485
OPT-X 280S-4P	75	138.0	1485	482	2	6.9	2.3	94	0.88	582	131.0	1490	126.0	1485
OPT-X 280M-4P	90	165.0	1485	579	2	6.9	2.3	94	0.88	595	157.0	1490	151.0	1485
OPT-X 315S-4P	110	201.0	1489	706	2	7	2.2	95	0.88	930	191.0	1485	184.0	1489
OPT-X 315M-4P	132	241.0	1489	847	2	7	2.2	95	0.88	970	229.0	1485	220.0	1489
OPT-X 315L1-4P	160	288.0	1489	1026	2	7.1	2.2	95	0.89	1090	273.0	1485	264.0	1489
OPT-X 315L2-4P	200	359.0	1488	1284	2	7.1	2.2	95	0.89	1155	341.0	1485	329.0	1488
OPT-X 355L1-4P	250	444.0	1489	1603	2.4	8.9	3.49	95	0.90	1527	422.0	1492	406.0	1489
OPT-X 355L2-4P	315	559.0	1489	2020	2.9	10	4.2	95	0.90	1670	531.0	1493	512.0	1489
OPT-X 355L3-4P	355	559	1491	2271	2.8	9.7	4	95.4	0.90	1710	646	1492	637	1492
6P														
OPTA-X 80M1-6P	0.37	1.3	885	4	1.9	5.5	2.1	62	0.70	10	1.2	885	1.2	885
OPTA-X 80M2-6P	0.55	1.6	885	5.9	1.9	5.5	2.1	71	0.72	13	1.6	885	1.5	885
OPTA-X 90S-6P	0.75	2.1	910	7.9	2	6	2.1	75.9	0.72	16	2.0	910	1.9	910
OPTA-X 90L-6P	1.1	2.9	910	11.5	2	6	2.1	78.1	0.73	22	2.8	910	2.7	910
OPTA-X 100L-6P	1.5	3.8	925	15.5	2	6.5	2.1	79.8	0.75	25	3.6	925	3.5	925
OPTA-X 112M-6P	2.2	5.4	935	22.5	2	6.6	2.1	81.8	0.76	34	5.1	935	4.9	935
OPTA-X 132S-6P	3	7.2	960	29.8	1.9	6.8	2.1	83.3	0.76	45	6.8	960	6.6	960
OPTA-X 132M1-6P	4	9.5	960	39.8	1.9	6.8	2.1	84.6	0.76	54	9.0	960	8.7	960
OPTA-X 132M2-6P	5.5	12.6	960	54.7	1.9	7	2.1	86	0.77	61	12.0	960	11.6	960
OPTA-X 160M-6P	7.5	17.0	970	73.8	2	7	2.1	87.2	0.77	104	16.1	970	15.5	970
OPTA-X 160L-6P	11	24.2	970	108	2	7.2	2.1	88.7	0.78	126	22.9	970	22.1	970
OPT-X 80M1-6P	0.37	1.3	885	4	1.9	5.5	2.1	62	0.70	15	1.2	885	1.2	885
OPT-X 80M2-6P	0.55	1.6	885	5.9	1.9	5.5	2.1	71	0.72	16	1.6	885	1.5	885
OPT-X 90S-6P	0.75	2.1	910	7.9	2	6	2.1	75.9	0.72	20	2.0	910	1.9	910
OPT-X 90L-6P	1.1	2.9	910	11.5	2	6	2.1	78.1	0.73	24	2.8	910	2.7	910
OPT-X 100L-6P	1.5	3.8	925	15.5	2	6.5	2.1	79.8	0.75	33	3.6	925	3.5	925
OPT-X 112M-6P	2.2	5.4	935	22.5	2	6.6	2.1	81.8	0.76	40	5.1	935	4.9	935
OPT-X 132S-6P	3	7.2	960	29.8	1.9	6.8	2.1	83.3	0.76	56	6.8	960	6.6	960
OPT-X 132M1-6P	4	9.5	960	39.8	1.9	6.8	2.1	84.6	0.76	63	9.0	960	8.7	960
OPT-X 132M2-6P	5.5	12.6	960	54.7	1.9	7	2.1	86	0.77	71	12.0	960	11.6	960
OPT-X 160M-6P	7.5	17.0	970	73.8	2	7	2.1	87.2	0.77	112	16.1	970	15.5	970
OPT-X 160L-6P	11	24.2	970	108	2	7.2	2.1	88.7	0.78	132	22.9	970	22.1	970
OPT-X 180L-6P	15	31.4	975	147	1.9	7.3	2.1	89.7	0.81	172	29.8	975	28.7	975
OPT-X 200L1-6P	18.5	38.4	980	180	1.9	7.3	2.1	90.4	0.81	215	36.5	980	35.1	980
OPT-X 200L2-6P	22	44.3	985	213	1.9	7.4	2.1	90.9	0.83	221	42.1	985	40.6	985
OPT-X 225M-6P	30	59.2	985	291	1.9	6.9	2.1	91.7	0.84	292	56.2	985	54.2	985
OPT-X 250M-6P	37	70.9	987	358	1.9	7.1	2.1	92.2	0.86	375	67.4	987	64.9	987
OPT-X 280S-6P	45	85.8	988	435	1.9	7.3	2	92.7	0.86	497	81.5	988	78.5	988
OPT-X 280M-6P	55	104.0	988	532	1.9	7.3	2	93.1	0.86	537	99.2	988	95.6	988
OPT-X 315S-6P	75	141.0	989	724	1.9	6.6	2	93.7	0.86	830	134.0	989	129.0	989
OPT-X 315M-6P	90	169.0	989	869	1.9	6.7	2	94	0.86	910	161.0	989	155.0	989
OPT-X 315L1-6P	110	206.0	989	1062	1.9	6.7	2	94.3	0.86	1035	196.0	989	189.0	989
OPT-X 315L2-6P	132	244.0	989	1275	1.9	6.8	2	94.6	0.87	1120	232.0	989	223.0	989
OPT-X 355L1-6P	160	291.0	992	1540	1.54	6.32	2.67	94.8	0.88	1628	277.0	992	267.0	992
OPT-X 355L2-6P	200	363.0	992	1925	1.78	6.8	2.95	95	0.88	1800	345.0	992	333.0	992
OPT-X 355L3-6P	250	454.0	992	2407	1.48	6	2.5	95	0.88	1878	432.0	992	416.0	992

OptiMity-X 3-phase induction motors

Electrical and Mechanical Characteristics

Electrical and Mechanical Data IE3

Type	380V 50Hz										400V/50Hz		415V/50Hz	
	Rated Power	Rated Current	Rated Speed	Rated Torque	Starting Torque /Rated Torque	Starting Current /Rated Current	MaXP. Torque /Rated Torque	Efficiency	Power Factor	Weight	Rated Current	Rated Speed	Rated Current	Rated Speed
	Pn	In	r/min	Mn	Md/Mn	Id/In	Mm/Mn	%	cos φ	IM B3	In	r/min	In	r/min
2P														
OPTA-XP 80M1-2P	0.75	1.8	2870	2.4	2.2	6.1	2.3	80.7	0.82	11	1.6	2870	1.6	2870
OPTA-XP 80M2-2P	1.1	2.5	2880	3.5	2.2	7	2.3	82.7	0.83	12	2.3	2880	2.2	2880
OPTA-XP 90S-2P	1.5	3.3	2900	4.8	2.2	7	2.3	84.2	0.84	16	3.1	2900	3.0	2900
OPTA-XP 90L-2P	2.2	4.7	2900	7	2.2	7	2.3	85.9	0.85	20	4.3	2900	4.2	2900
OPTA-XP 100L-2P	3	6.2	2900	9.6	2.2	7.5	2.3	87.1	0.87	23	5.7	2900	5.5	2900
OPTA-XP 112M-2P	4	8.1	2910	12.7	2.2	7.5	2.3	88.1	0.88	31	7.4	2910	7.2	2910
OPTA-XP 132S1-2P	5.5	10.9	2915	17.5	2.2	7.5	2.3	89.2	0.88	46	10.1	2915	9.7	2915
OPTA-XP 132S2-2P	7.5	14.7	2915	23.9	2.2	7.5	2.3	90.1	0.88	54	13.7	2915	13.2	2915
OPTA-XP 160M1-2P	11	21.0	2940	35	2.2	7.5	2.3	91.2	0.88	109	19.8	2940	19.1	2940
OPTA-XP160M2-2P	15	28.4	2945	47.8	2.2	7.5	2.3	91.9	0.89	118	26.5	2945	25.5	2945
OPTA-XP 160L-2P	18.5	34.4	2945	58.9	2.2	7.5	2.3	92.4	0.89	128	32.5	2945	31.3	2945
OPT-XP 80M1-2P	0.75	1.8	2870	2.4	2.2	7	2.3	80.7	0.82	15	1.6	2870	1.6	2870
OPT-XP 80M2-2P	1.1	2.5	2880	3.5	2.2	7.3	2.3	82.7	0.83	16	2.3	2880	2.2	2880
OPT-XP 90S-2P	1.5	3.3	2900	4.8	2.2	7.6	2.3	84.2	0.84	21	3.1	2900	3.0	2900
OPT-XP 90L-2P	2.2	4.7	2900	7	2.2	7.6	2.3	85.9	0.85	24	4.3	2900	4.2	2900
OPT-XP 100L-2P	3	6.2	2900	9.6	2.2	7.8	2.3	87.1	0.87	35	5.7	2900	5.5	2900
OPT-XP 112M-2P	4	8.1	2910	12.7	2.2	8.3	2.3	88.1	0.88	40	7.4	2910	7.2	2910
OPT-XP 132S1-2P	5.5	10.9	2915	17.5	2	8.3	2.3	89.2	0.88	59	10.1	2915	9.7	2915
OPT-XP 132S2-2P	7.5	14.7	2915	23.9	2	7.9	2.3	90.1	0.88	62	13.7	2915	13.2	2915
OPT-XP 160M1-2P	11	21.0	2940	35	2	8.1	2.3	91.2	0.88	117	19.8	2940	19.1	2940
OPT-XP 160M2-2P	15	28.4	2945	47.8	2	8.1	2.3	91.9	0.89	127	26.5	2945	25.5	2945
OPT-XP 160L-2P	18.5	34.4	2945	58.9	2	8.2	2.3	92.4	0.89	141	32.5	2945	31.3	2945
OPT-XP 180M-2P	22	40.7	2950	70	2	8.2	2.3	92.7	0.89	166	38.5	2950	37.1	2950
OPT-XP 200L1-2P	30	55.1	2955	95.5	2	7.6	2.3	93.3	0.89	242	52.1	2955	50.3	2955
OPT-XP 200L2-2P	37	67.5	2955	117.8	2	7.6	2.3	93.7	0.89	261	64.0	2955	61.7	2955
OPT-XP 225M-2P	45	81.8	2960	143.3	2	7.7	2.3	94	0.90	313	76.8	2960	74.0	2960
OPT-XP 250M-2P	55	100.0	2970	175.1	2	7.1	2.3	94.3	0.90	392	93.5	2970	90.2	2970
OPT-XP 280S-2P	75	135.0	2975	238.8	1.8	7.1	2.3	94.7	0.90	552	127.0	2975	122.4	2975
OPT-XP 280M-2P	90	160.0	2975	286.5	1.8	7.1	2.3	95	0.90	559	151.9	2975	146.4	2975
OPT-XP 315S-2P	110	195.0	2975	350.2	1.8	7.1	2.3	95.2	0.90	945	185.3	2975	178.6	2975
OPT-XP 315M-2P	132	233.0	2975	420.2	1.8	7.1	2.3	95.4	0.90	980	221.9	2975	213.9	2975
OPT-XP 315L1-2P	160	279.0	2975	509.3	1.8	7.2	2.3	95.6	0.91	1040	265.5	2975	255.9	2975
OPT-XP 315L2-2P	200	348.0	2975	636.7	1.8	7.2	2.2	95.8	0.91	1135	331.1	2975	319.2	2975
OPT-XP 355L1-2P	250	435.0	2980	795.8	2.48	7.27	2.8	95.8	0.91	1577	413.9	2980	399.0	2980
OPT-XP 355L2-2P	315	548.0	2980	1003	2.68	7.59	3.1	95.8	0.91	1750	521.5	2980	502.7	2980
OPT-XP 355L3-2P	355	620.0	2980	1130	2.84	7.88	2.8	95.8	0.91	1787	587.8	2980	567	2980
4P														
OPTA-XP 80M1-4P	0.55	1.5	1385	3.8	2.3	6	2.3	80.8	0.75	13	1.4	1425	1.4	1385
OPTA-XP 80M2-4P	0.75	1.8	1430	4.8	2.3	6.6	2.3	82.5	0.75	14	1.7	1430	1.7	1430
OPTA-XP 90S-4P	1.1	2.6	1435	7	2.3	6.8	2.3	84.1	0.76	20	2.5	1435	2.4	1435
OPTA-XP 90L-4P	1.5	3.5	1435	9.6	2.3	7	2.3	85.3	0.77	24	3.3	1435	3.2	1435
OPTA-XP 100L1-4P	2.2	4.8	1445	14	2.3	7.6	2.3	86.7	0.81	27	4.5	1445	4.4	1445
OPTA-XP 100L2-4P	3	6.3	1445	19.1	2.3	7.6	2.3	87.7	0.82	33	6.0	1445	5.8	1445
OPTA-XP 112M-4P	4	8.4	1450	25.5	2.2	7.8	2.3	88.6	0.82	43	7.9	1450	7.7	1450
OPTA-XP 132S-4P	5.5	11.2	1460	35	2	7.9	2.3	89.6	0.83	54	10.7	1460	10.3	1460
OPTA-XP 132M-4P	7.5	15.0	1460	47.8	2	7.5	2.3	90.4	0.84	63	14.3	1460	13.7	1460
OPTA-XP 160M-4P	11	21.5	1470	70	2	7.7	2.3	91.4	0.85	108	20.4	1470	19.7	1470
OPTA-XP 160L-4P	15	28.8	1470	95.5	2	7.8	2.3	92.1	0.86	122	27.3	1470	26.3	1470
OPT-XP 80M1-4P	0.55	1.5	1385	3.8	2.3	6	2.3	80.8	0.75	16	1.4	1425	1.4	1385
OPT-XP 80M2-4P	0.75	1.8	1430	4.8	2.3	6.6	2.3	82.5	0.75	17	1.7	1430	1.7	1430
OPT-XP 90S-4P	1.1	2.6	1435	7	2.3	6.8	2.3	84.1	0.76	22	2.5	1435	2.4	1435
OPT-XP 90L-4P	1.5	3.5	1435	9.6	2.3	7	2.3	85.3	0.77	25	3.3	1435	3.2	1435
OPT-XP 100L1-4P	2.2	4.8	1445	14	2.3	7.6	2.3	86.7	0.81	34	4.5	1445	4.4	1445
OPT-XP 100L2-4P	3	6.3	1445	19.1	2.3	7.6	2.3	87.7	0.82	34	6.0	1445	5.8	1445
OPT-XP 112M-4P	4	8.4	1450	25.5	2.2	7.8	2.3	88.6	0.82	45	7.9	1450	7.7	1450
OPT-XP 132S-4P	5.5	11.2	1460	35	2	7.9	2.3	89.6	0.83	60	10.7	1460	10.3	1460
OPT-XP 132M-4P	7.5	15.0	1460	47.8	2	7.5	2.3	90.4	0.84	74	14.3	1460	13.7	1460
OPT-XP 160M-4P	11	21.5	1470	70	2	7.7	2.3	91.4	0.85	121	20.4	1470	19.7	1470
OPT-XP 160L-4P	15	28.8	1470	95.5	2	7.8	2.3	92.1	0.86	135	27.3	1470	26.3	1470

OptiMity-X 3-phase induction motors

Electrical and Mechanical Characteristics

Electrical and Mechanical Data IE3

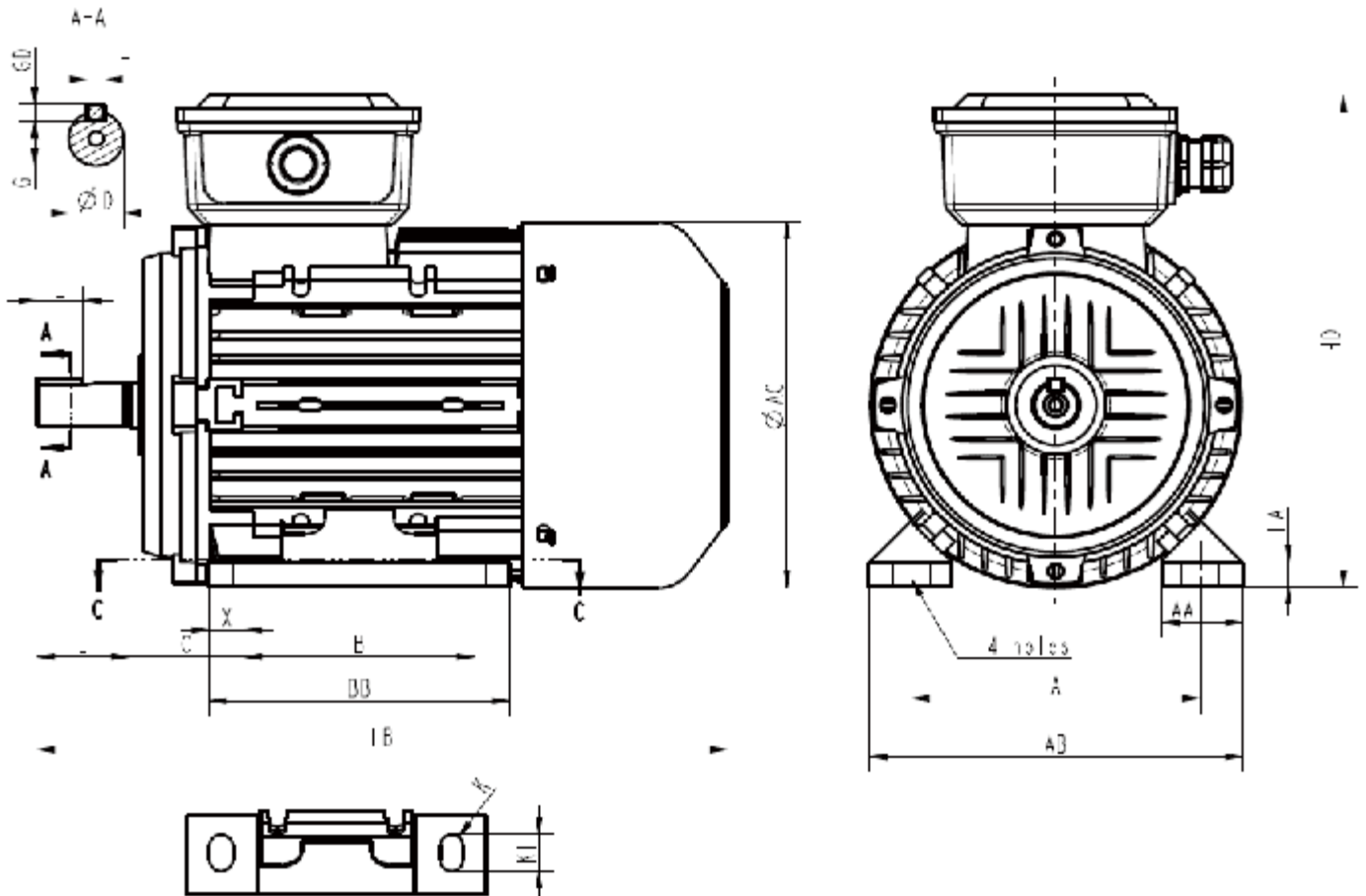
Type	380V 50Hz										400V/50Hz		415V/50Hz	
	Rated Power	Rated Current	Rated Speed	Rated Torque	Starting Torque /Rated Torque	Starting Current /Rated Current	MaXP. Torque /Rated Torque	Efficiency	Power Factor	Weight	Rated Current	Rated Speed	Rated Current	Rated Speed
	Pn	In	r/min	Mn	Md/Mn	Id/In	Mm/Mn	%	cos ϕ	IM B3	In	r/min	In	r/min
OPT-XP 180M-4P	18.5	35.3	1475	117.8	2	7.8	2.3	92.6	0.86	163	33.5	1475	32.3	1475
OPT-XP 180L-4P	22	41.8	1475	140.1	2	7.8	2.3	93.0	0.86	182	39.7	1475	38.3	1475
OPT-XP 200L-4P	30	56.6	1475	191	2	7.3	2.3	93.6	0.86	253	53.8	1475	51.9	1475
OPT-XP 225S-4P	37	69.6	1480	235.6	2	7.4	2.3	93.9	0.86	283	66.1	1480	63.7	1480
OPT-XP 225M-4P	45	84.4	1480	286.5	2	7.4	2.3	94.2	0.86	313	80.2	1480	77.3	1480
OPT-XP 250M-4P	55	102.7	1480	350.2	2	7.4	2.3	94.6	0.86	403	97.6	1480	94.1	1480
OPT-XP 280S-4P	75	136.3	1480	477.5	2	6.9	2.3	95.0	0.88	582	129	1480	124.8	1480
OPT-XP 280M-4P	90	163.2	1480	573	2	6.9	2.3	95.2	0.88	595	155	1480	149	1480
OPT-XP 315S-4P	110	196.8	1485	700.3	2	7	2.2	95.4	0.89	930	187	1485	180	1485
OPT-XP 315M-4P	132	235.7	1485	840.4	2	7	2.2	95.6	0.89	970	224	1485	216	1485
OPT-XP 315L1-4P	160	285.1	1485	1019	2	7.1	2.2	95.8	0.89	1090	271	1485	261	1485
OPT-XP 315L2-4P	200	351.7	1485	1273	2	7.1	2.2	96.0	0.90	1155	334	1485	322	1485
OPT-XP 355L1-4P	250	439.6	1490	1591	2.4	8.9	3.49	96.0	0.90	1527	418	1490	403	1490
OPT-XP 355L2-4P	315	553.9	1490	2005	2.9	10	4.2	96.0	0.90	1670	526	1490	507	1490
OPT-XP 355L3-4P	355	638.5	1490	2260	2.8	9.7	4	96.0	0.88	1710	607	1490	585	1490
6P														
OPTA-XP 80M1-6P	0.37	1.3	885	4	1.9	5.5	2.1	73.5	0.70	10	1.2	885	1.2	885
OPTA-XP 80M2-6P	0.55	1.6	885	5.9	1.9	5.5	2.1	77.2	0.72	13	1.6	885	1.5	885
OPTA-XP 90S-6P	0.75	2.0	925	7.2	2	6	2.1	78.9	0.72	16	2.0	910	1.9	910
OPTA-XP 90L-6P	1.1	2.8	925	10.5	2	6	2.1	81	0.73	22	2.8	910	2.7	910
OPTA-XP 100L-6P	1.5	3.8	945	14.3	2	6.5	2.1	82.5	0.75	25	3.6	925	3.5	925
OPTA-XP 112M-6P	2.2	5.4	960	21	2	6.6	2.1	84.3	0.76	34	5.1	935	4.9	935
OPTA-XP 132S-6P	3	7.2	965	28.7	1.9	6.8	2.1	85.6	0.76	45	6.8	960	6.6	960
OPTA-XP 132M1-6P	4	9.5	970	38.2	1.9	6.8	2.1	86.8	0.76	54	9.0	960	8.7	960
OPTA-XP 132M2-6P	5.5	12.7	970	52.5	1.9	7	2.1	88	0.77	61	12.0	960	11.6	960
OPTA-XP 160M-6P	7.5	16.2	975	71.6	2	7	2.1	89.1	0.77	97	16.1	970	15.5	970
OPTA-XP 160L-6P	11	23.1	975	105.1	2	7.2	2.1	90.3	0.78	113	22.9	970	22.1	970
OPT-XP 80M1-6P	0.37	1.3	885	4	1.9	5.5	2.1	73.5	0.70	15	1.2	885	1.2	885
OPT-XP 80M2-6P	0.55	1.6	885	5.9	1.9	5.5	2.1	77.2	0.72	16	1.6	885	1.5	885
OPT-XP 90S-6P	0.75	2.1	910	7.9	2	6	2.1	78.9	0.72	20	2.0	910	1.9	910
OPT-XP 90L-6P	1.1	2.9	910	11.5	2	6	2.1	81	0.73	24	2.8	910	2.7	910
OPT-XP 100L-6P	1.5	3.8	925	15.5	2	6.5	2.1	82.5	0.75	33	3.6	925	3.5	925
OPT-XP 112M-6P	2.2	5.4	935	22.5	2	6.6	2.1	84.3	0.76	40	5.1	935	4.9	935
OPT-XP 132S-6P	3	7.2	960	29.8	1.9	6.8	2.1	85.6	0.76	56	6.8	960	6.6	960
OPT-XP 132M1-6P	4	9.5	960	39.8	1.9	6.8	2.1	86.8	0.76	63	9.0	960	8.7	960
OPT-XP 132M2-6P	5.5	12.6	960	54.7	1.9	7	2.1	88	0.77	71	12.0	960	11.6	960
OPT-XP 160M-6P	7.5	17.0	970	73.8	2	7	2.1	89.1	0.77	112	16.1	970	15.5	970
OPT-XP 160L-6P	11	24.2	970	108	2	7.2	2.1	90.3	0.78	132	22.9	970	22.1	970
OPT-XP 180L-6P	15	31.4	975	147	1.9	7.3	2.1	91.2	0.81	172	29.8	975	28.7	975
OPT-XP 200L1-6P	18.5	38.4	980	180	1.9	7.3	2.1	91.7	0.81	215	36.5	980	35.1	980
OPT-XP 200L2-6P	22	44.3	985	213	1.9	7.4	2.1	92.2	0.83	221	42.1	985	40.6	985
OPT-XP 225M-6P	30	59.2	985	291	1.9	6.9	2.1	92.9	0.84	292	56.2	985	54.2	985
OPT-XP 250M-6P	37	70.9	987	358	1.9	7.1	2.1	93.3	0.86	375	67.4	987	64.9	987
OPT-XP 280S-6P	45	85.8	988	435	1.9	7.3	2	93.7	0.86	497	81.5	988	78.5	988
OPT-XP 280M-6P	55	104.0	988	532	1.9	7.3	2	94.1	0.86	537	99.2	988	95.6	988
OPT-XP 315S-6P	75	141.0	989	724	1.9	6.6	2	94.6	0.86	830	134.0	989	129.0	989
OPT-XP 315M-6P	90	169.0	989	869	1.9	6.7	2	94.9	0.86	910	161.0	989	155.0	989
OPT-XP 315L1-6P	110	206.0	989	1062	1.9	6.7	2	95.1	0.86	1035	196.0	989	189.0	989
OPT-XP 315L2-6P	132	244.0	989	1275	1.9	6.8	2	95.4	0.87	1120	232.0	989	223.0	989
OPT-XP 355L1-6P	160	291.0	992	1540	1.54	6.32	2.67	95.6	0.88	1628	277.0	992	267.0	992
OPT-XP 355L2-6P	200	363.0	992	1925	1.78	6.8	2.95	95.6	0.88	1800	345.0	992	333.0	992
OPT-XP 355L3-6P	250	454.0	992	2407	1.48	6	2.5	95.6	0.88	1878	432.0	992	416.0	992

OptiMity-X 3-phase induction motors

Dimension

OPTAX

IM 1001 (IM B3)



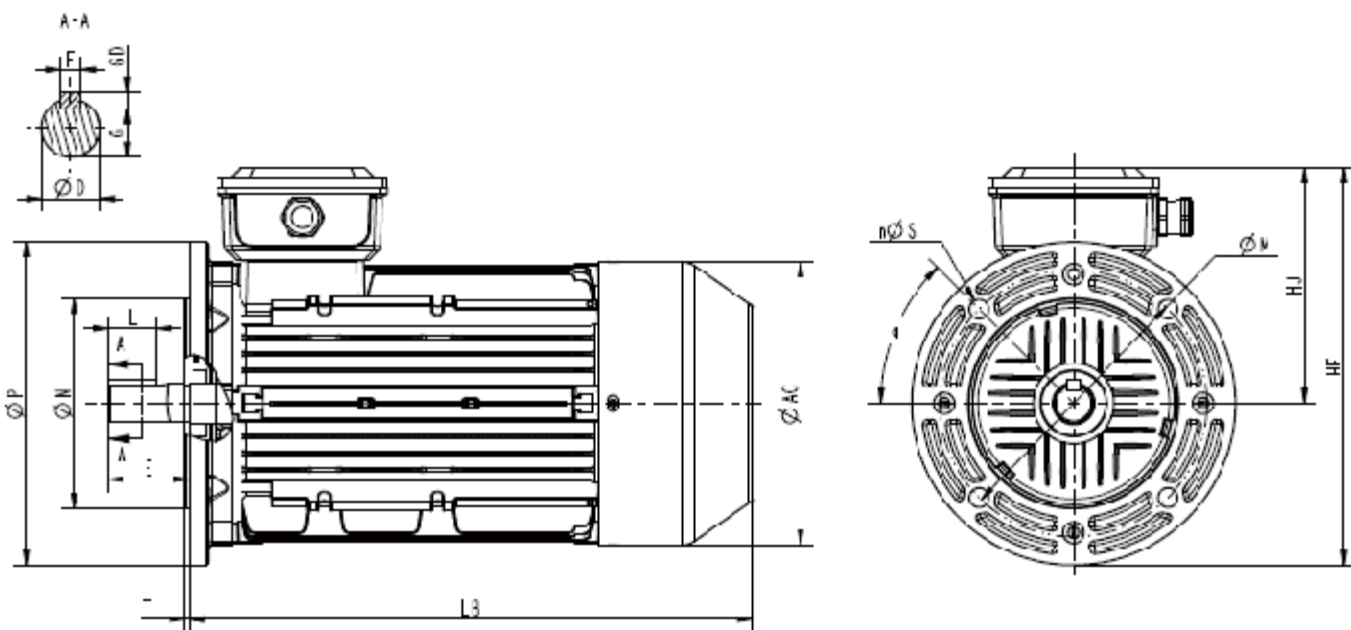
Frame Size	Pole	Main dimensions(mm)																			
		A	B	C	D	E	F	G	GD	L	AA	X	H	K	K1	BB	HA	AB	AC	HD	LB
80M	2,4	125	100	50	19	40	6	15.5	6	22	35	15	80	R5	16	130	10	162	161	217	260
90S	2,4,6	140	100	56	24	50	8	20	7	32	37	15	90	R5	16	130	12	177	175	236	306
90L			125							32		15				155					336
100L	2,4,6	160	140	63	28	60	8	24	7	40	45	20	100	R5	16	180	14	205	203	260	383
112M	2,4,6	190	140	70	28	60	8	24	7	40	60	18	112	R6	18	176	15	224	220	277	358
132S	2,4,6	216	140	89	38	80	10	33	8	55	65	21	132	R6.5	20	185	18	263	257	319	390
132M			178						8	55		21				220					430
160M	2,4,6	254	210	108	42	110	12	37	8	80	55	25	160	R7.4	17.6	259	20	304	311	405	497
160L			254						8	80		25				303					541

OptiMity-X 3-phase induction motors

Dimension

OPTAX

IM 3001 (IM B5)



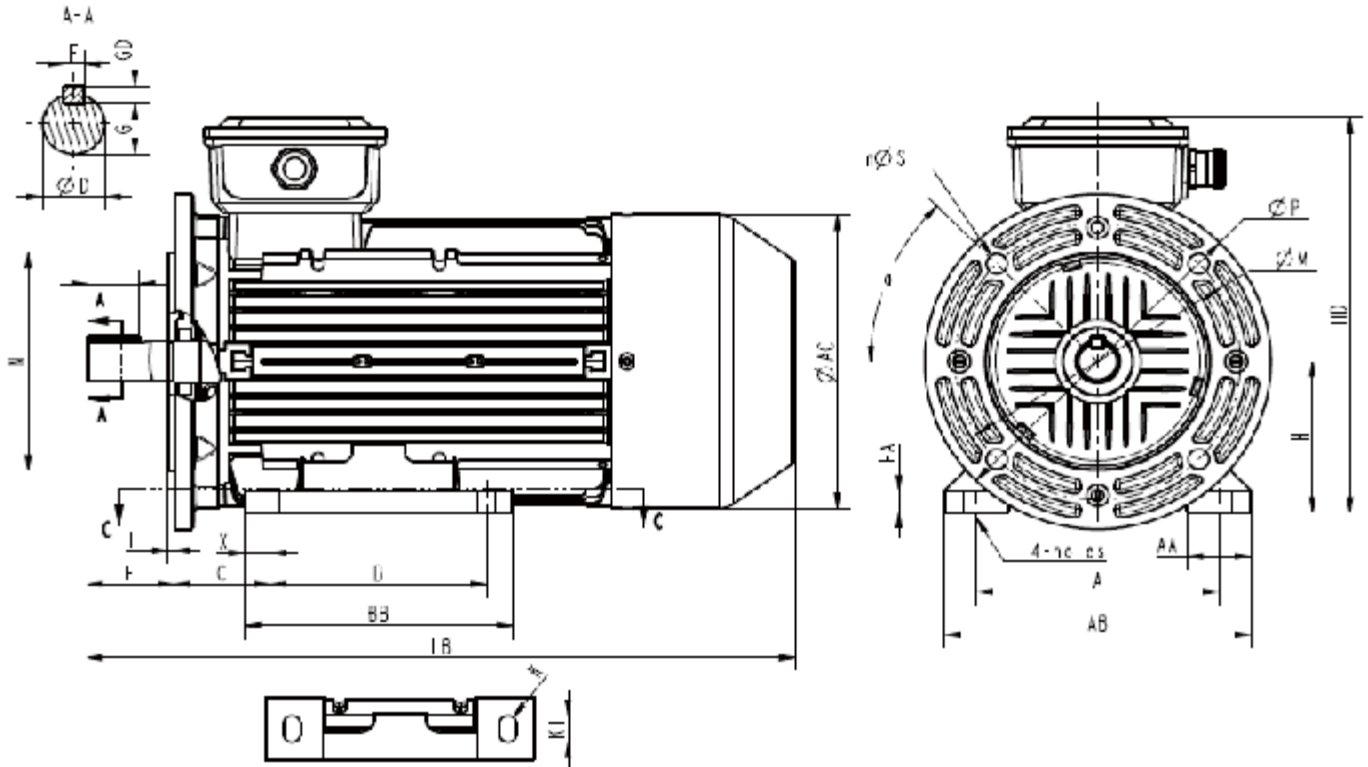
Frame Size	Pole	Main dimensions(mm)															
		D	E	F	G	GD	L	M	N	P	S	T	AC	HF	HJ	a	LB
80M	2,4	19	40	6	15.5	6	22	165	130	200	4-Ø12	3.5	161	237	137	45°	260
90S	2,4,6	24	50	8	20	7	32	165	130	200	4-Ø12	3.5	175	246	146		306
90L							32										336
100L	2,4,6	28	60	8	24	7	40	215	180	250	4-Ø15	4	203	285	160		383
112M	2,4,6	28	60	8	24	7	40	215	180	250	4-Ø15	4	220	290	165		358
132S	2,4,6	38	80	10	33	8	55	265	230	300	4-Ø15	4	257	337	187		390
132M																	430
160M	2,4,6	42	110	12	37	8	80	300	250	350	4-Ø19	5	311	420	245		497
160L						8	80										541

OptiMity-X 3-phase induction motors

Dimension

OPTAX

IM 2001 (IM B35)



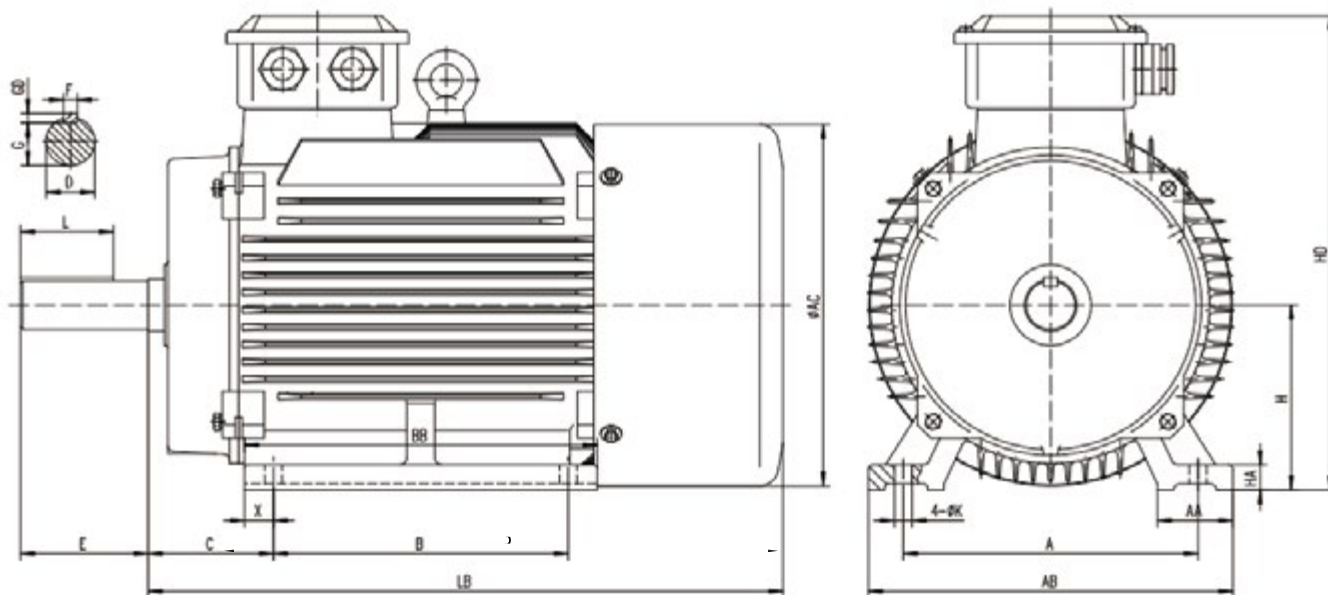
Frame Size	Pole	Main dimensions(mm)																									
		A	B	C	D	E	F	G	GD	L	X	H	K	K1	M	N	P	S	T	AA	BB	HA	AB	AC	HD	a	LB
80M	2,4	125	100	50	19	40	6	15.5	6	22	15	80	R5	16	165	130	200	4-Ø12	3.5	35	130	10	162	161	217		260
90S	2,4,6	140	100	56	24	50	8	20	7	32	15	90	R5	16	165	130	200	4-Ø12	3.5	37	130	12	177	175	236		306
90L			125							32	15										155					336	
100L	2,4,6	160	140	63	28	60	8	24	7	40	20	100	R5	16	215	180	250	4-Ø15	4	45	180	14	205	203	260		383
112M	2,4,6	190	140	70	28	60	8	24	7	40	18	112	R6	18	215	180	250	4-Ø15	4	60	176	15	224	220	277	45°	358
132S	2,4,6	216	140	89	38	80	10	33	8	55	21	132	R6.5	20	265	230	300	4-Ø15	4	65	185	18	263	257	319		390
132M			178						8	55	21										220					430	
160M	2,4,6	254	210	108	42	110	12	37	8	80	25	160	R7.4	17.6	300	250	350	4-Ø19	5	55	259	20	304	311	405		497
160L			254						8	80	25										303					541	

OptiMity-X 3-phase induction motors

Dimension

OPTX

IM 1001 (IM B3)



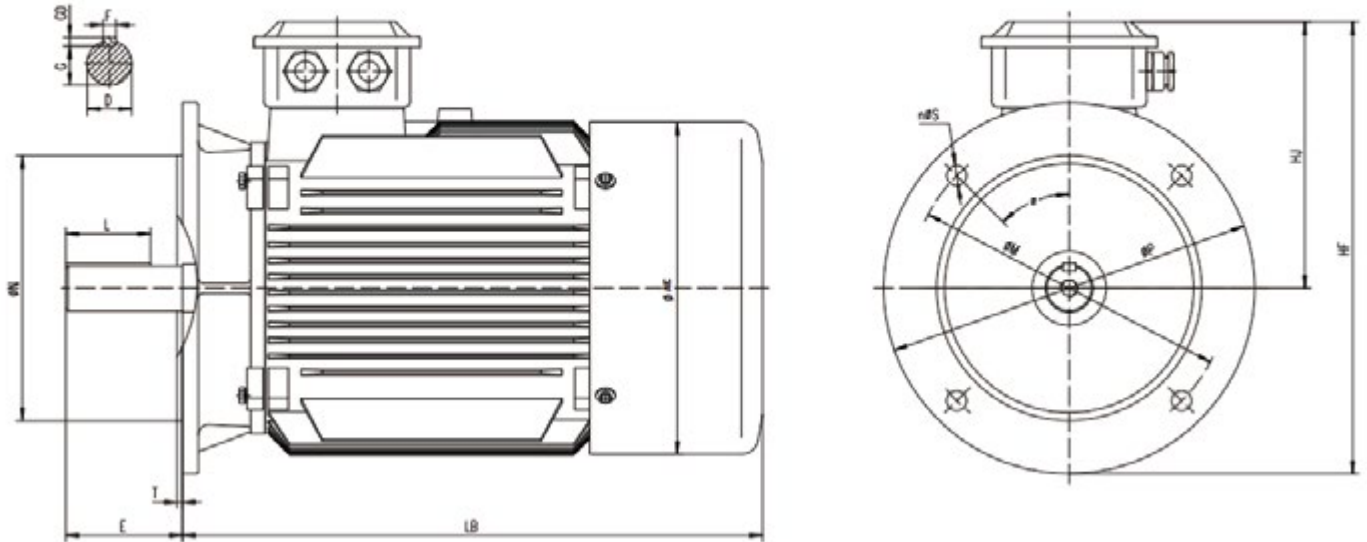
Frame Size	Pole	Main dimensions(mm)																		
		A	B	C	D	E	F	G	GD	L	X	H	K	BB	HA	AA	AB	AC	HD	LB
80M	2,4	125	100	50	19	40	6	15.5	6	22	15	80	10	142	10	34	160	170	215	258
90S	2,4,6	140	100	56	24	50	8	20	7	32	20	90	10	180	12	36	176	185	242	300
90L			125											210						330
100L	2,4,6	160	140	63	28	60	8	24	7	40	18	100	12	233	14	40	200	208	265	367
112M	2,4,6	190	140	70	28	60	8	24	7	40	20	112	12	180	15	45	226	222	290	340
132S	2,4,6	216	140	89	38	80	10	33	8	55	23	132	15	186	18	55	262	256	335	390
132M			178						224					425						
160M	2,4,6	254	210	108	42	110	12	37	8	80	25	160	15	260	20	65	314	315	411	505
160L			254						304					550						
180M	2,4,6	279	241	121	48	110	14	42.5	9	80	35	180	15	311	22	70	349	355	447	580
180L			279						349					618						
200L	2,4,6	318	305	133	55	110	16	49	10	80	32	200	19	369	25	70	388	397	498	650
225S	4	356	286	149	60	140	18	53	11	100	45	225	19	368	28	75	431	446	546	675
225M	2		311		55	110	16	49	10	80	45			393						700
250M	4,6	406	349	168	60	140	18	53	11	100	55	250	24	445	30	80	484	485	604	770
	2				65	140	18	58	11	100	55			445						770
280S	4,6	457	368	190	65	140	18	58	11	100	69	280	24	485	35	85	542	574	663	810
	2				75		140	20	67.5	12	100			69						485
280M	4,6	457	419	190	65	140	18	58	11	100	69	280	24	536	35	85	542	574	663	865
	2				75		140	20	67.5	12	100			69						536
315S	4,6	508	406	216	65	140	18	58	11	100	84	315	28	570	45	120	628	616	831	1040
	2				80	170	22	71	14	130	84			570						1040
315M	4,6	508	457	216	65	140	18	58	11	100	84	315	28	680	45	120	628	616	831	1150
	2				80	170	22	71	14	130	84			680						1150
315L	4,6	508	457	216	65	140	18	58	11	100	84	315	28	680	45	120	628	616	831	1150
	2				80	170	22	71	14	130	84			680						1150
355M1	4,6	610	457	254	75	140	20	67.5	12	100	68	355	28	750	52	116	726	700	985	1490
	2				95	170	25	86	14	130	68									1520
355M2	4,6	610	457	254	75	140	20	67.5	12	100	68	355	28	750	52	116	726	700	985	1490
	2				95	170	25	86	14	130	68									1520
355L1	4,6	630	457	254	75	140	20	67.5	12	100	68	355	28	750	52	116	726	700	985	1490
	2				95	170	25	86	14	130	68									1520
355L2	4,6	630	457	254	75	140	20	67.5	12	100	68	355	28	750	52	116	726	700	985	1490
	2				95	170	25	86	14	130	68									1520

OptiMity-X 3-phase induction motors

Dimension

OPTX

IM 3001 (IM B5)



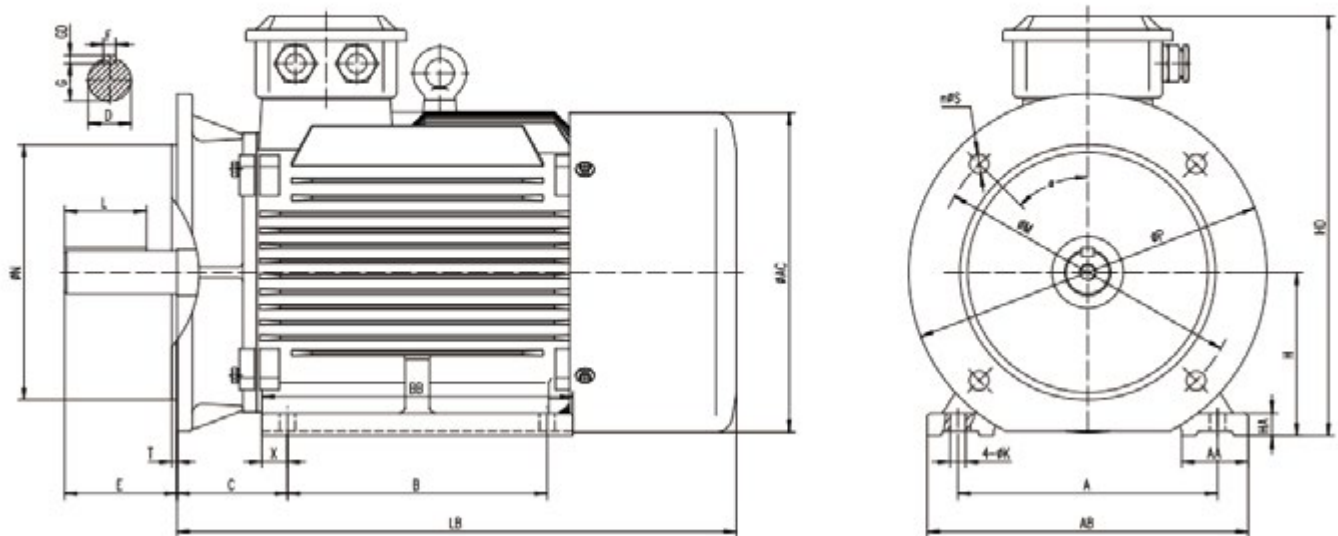
Frame Size	Pole	Main dimensions(mm)															
		D	E	F	G	GD	L	M	N	P	S	T	AC	HF	HJ	a	LB
80M	2,4	19	40	6	15.5	6	22	165	130	200	4-Ø12	3.5	170	235	135	45°	258
90S	2,4,6	24	50	8	20	7	32	165	130	200	4-Ø12	3.5	185	252	152		300
90L							32										330
100L	2,4,6	28	60	8	24	7	40	215	180	250	4-Ø15	4	208	290	165		367
112M	2,4,6	28	60	8	24	7	40	215	180	250	4-Ø15	4	222	303	178		340
132S	2,4,6	38	80	10	33	8	55	265	230	300	4-Ø15	4	256	353	203		390
132M																	425
160M	2,4,6	42	110	12	37	8	80	300	250	350	4-Ø19	5	315	426	251		505
160L						8	80										550
180M	2,4,6	48	110	14	42.5	9	80	300	250	350	4-Ø19	5	355	442	267		580
180L						9	80									618	
200L	2,4,6	55	110	16	49	10	80	350	300	400	4-Ø19	5	397	498	298	650	
225S	4	60	140	18	53	11	100	400	350	450	8-Ø19	5	446	546	321	675	
225M	2	55	110	16	49	10	80									700	
	4,6	60	140	18	53	11	100									700	
250M	2	60	140	18	53	11	100	500	450	550	8-Ø19	5	485	629	354	770	
	4,6	65			58	11	100									770	
280S	2	65	140	18	58	11	100	500	450	550	8-Ø19	5	574	658	383	810	
	4,6	75			20	67.5	12									100	830
280M	2	65	140	18	58	11	100	500	450	550	8-Ø19	5	574	658	383	865	
	4,6	75			20	67.5	12									100	885
315S	2	65	140	18	58	11	100	600	550	660	8-Ø24	6	616	846	516	1040	
	4,6	80	170	22	71	14	130									1040	
315M	2	65	140	18	58	11	100	600	550	660	8-Ø24	6	616	846	516	1150	
	4,6	80	170	22	71	14	130									1150	
315L	2	65	140	18	58	11	100	600	550	660	8-Ø24	6	616	846	516	1150	
	4,6	80	170	22	71	14	130									1150	
355M1	2	75	140	20	67.5	12	100	740	660	800	8-Ø24	6	700	1030	630	1490	
	4,6	95	170	25	86	14	130									1520	
355M2	2	75	140	20	67.5	12	100	740	660	800	8-Ø24	6	700	1030	630	1490	
	4,6	95	170	25	86	14	130									1520	
355L1	2	75	140	20	67.5	12	100	740	660	800	8-Ø24	6	700	1030	630	1490	
	4,6	95	170	25	86	14	130									1520	
355L2	2	75	140	20	67.5	12	100	740	660	800	8-Ø24	6	700	1030	630	1490	
	4,6	95	170	25	86	14	130									1520	

OptiMity-X 3-phase induction motors

Dimension

OPTX

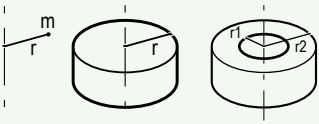
IM 2001 (IM B35)



Frame Size	Pole	Main dimensions(mm)																				a	LB			
		A	B	C	D	E	F	G	GD	L	X	H	K	M	N	P	S	T	AA	BB	HA			AB	AC	HD
80M	2,4	125	100	50	19	40	6	15.5	6	22	15	80	10	165	130	200	4-Ø12	3.5	34	142	10	160	170	215	45°	258
90S	2,4,6	140	100	56	24	50	8	20	7	32	20	90	10	165	130	200	4-Ø12	3.5	36	180	12	176	185	242		300
90L			125							210	210									330						
100L	2,4,6	160	140	63	28	60	8	24	7	40	18	100	12	215	180	250	4-Ø15	4	40	233	14	200	208	265		367
112M	2,4,6	190	140	70	28	60	8	24	7	40	20	112	12	215	180	250	4-Ø15	4	45	180	15	226	222	290		340
132S	2,4,6	216	140	89	38	80	10	33	8	55	23	132	15	265	230	300	4-Ø15	4	55	186	18	262	256	335		390
132M									178	224	224									425						
160M	2,4,6	254	210	108	42	110	12	37	8	80	25	160	15	300	250	350	4-Ø19	5	65	260	20	314	315	411		505
160L									254	304	304									550						
180M	2,4,6	279	241	121	48	110	14	42.5	9	80	35	180	15	300	250	350	4-Ø19	5	70	311	22	349	355	447		580
180L									279	349	349									618						
200L	2,4,6	318	305	133	55	110	16	49	10	80	32	200	19	350	300	400	4-Ø19	5	70	369	25	388	397	498		650
225S	4	356	286	149	60	140	18	53	11	100	45	225	19	400	350	450	8-Ø19	5	75	368	28	431	446	546		675
225M	2				311	55	110	16	49	10	80									45						700
250M	2	406	349	168	60	140	18	53	11	100	55	250	24	500	450	550	8-Ø19	5	80	445	30	484	485	604		770
	4,6				65	140	18	58	11	100	55									700						
280S	2	457	368	190	65	140	18	58	11	100	69	280	24	500	450	550	8-Ø19	5	85	485	35	542	574	663	810	
	4,6				75	140	20	67.5	12	100	69									830						
280M	2	419	190	140	65	140	18	58	11	100	69	280	24	500	450	550	8-Ø19	5	85	536	35	542	574	663	865	
	4,6				75	140	20	67.5	12	100	69									885						
315S	2	406	190	140	65	140	18	58	11	100	84	315	28	600	550	660	8-Ø24	6	120	570	45	628	616	831	1040	
	4,6				80	170	22	71	14	130	84									1040						
315M	2	508	457	216	65	140	18	58	11	100	84	315	28	600	550	660	8-Ø24	6	120	680	45	628	616	831	1150	
	4,6				80	170	22	71	14	130	84									1150						
315L	2	508	190	140	65	140	18	58	11	100	84	315	28	740	660	800	8-Ø24	6	116	680	52	726	700	985	1150	
	4,6				80	170	22	71	14	130	84									1490						
355M1	2	610	457	216	75	140	20	67.5	12	100	68	355	28	740	660	800	8-Ø24	6	116	680	52	726	700	985	1490	
	4,6				95	170	25	86	14	130	68									1520						
355M2	2	560	457	216	75	140	20	67.5	12	100	68	355	28	740	660	800	8-Ø24	6	116	680	52	726	700	985	1490	
	4,6				95	170	25	86	14	130	68									1520						
355L1	2	610	457	216	75	140	20	67.5	12	100	68	355	28	740	660	800	8-Ø24	6	116	680	52	726	700	985	1490	
	4,6				95	170	25	86	14	130	68									1520						
355L2	2	630	457	216	75	140	20	67.5	12	100	68	355	28	740	660	800	8-Ø24	6	116	680	52	726	700	985	1490	
	4,6				95	170	25	86	14	130	68									1520						

Standard formulae used in electrical engineering

MECHANICAL FORMULAE

Title	Formula	Unit	Definitions / Notes
Force	$F = m \cdot \gamma$	F in N m in kg γ in m/s^2	A force F is the product of a mass m by an acceleration γ
Weight	$G = m \cdot g$	G in N m in kg $g = 9.81 m/s^2$	
Moment	$M = F \cdot r$	M in N.m F in N r in m	The torque M of a force in relation to an axis is the product of that force multiplied by the distance r of the point of application of F in relation to the axis.
Power	- rotating $P = M \cdot \omega$ - linear $P = F \cdot V$	P in W M in N.m ω in rad/s P in W F in N V in m/s	Power P is the quantity of work yielded per unit of time $\omega = 2\pi N/60$ where N is the speed of rotation in min^{-1} $V =$ linear velocity
Acceleration time	$t = J \cdot \frac{\omega}{M_a}$	t in s J in $kg \cdot m^2$ ω in rad/s M_a in Nm	J is the moment of inertia of the system M_a is the moment of acceleration Note: All the calculations refer to a single rotational speed ω where the inertias at speed ω' are corrected to speed ω by the following calculation: $J_\omega = J_{\omega'} \cdot \left(\frac{\omega'}{\omega}\right)^2$
Moment of inertia Centre of gravity	$J = m \cdot r^2$		
Solid cylinder around its axis	$J = m \cdot \frac{r^2}{2}$	J in $kg \cdot m^2$ m in kg r in m	
Hollow cylinder around its axis	$J = m \cdot \frac{r_1^2 + r_2^2}{2}$		
Inertia of a mass in linear motion	$J = m \cdot \left(\frac{V}{\omega}\right)^2$	J in $kg \cdot m^2$ m in kg v in m/s ω in rad/s	The moment of inertia of a mass in linear motion transformed to a rotating motion.

Standard formulae used in electrical engineering

ELECTRICAL FORMULAE

Title	Formula	Unit	Definitions / Notes
Accelerating torque	$M_a = \frac{M_D + 2M_A + 2M_M + M_N - M_r}{6}$ <p>General formula:</p> $M_a = \frac{1}{N_N} \int_0^{N_N} (M_{mot} - M_r) dN$	Nm	Moment of acceleration M_a is the difference between the motor torque M_{mot} (estimated), and the resistive torque M_r . (M_D , M_A , M_M , M_N , see curve below) N = instantaneous speed N_N = rated speed
Power required by the machine	$P = \frac{M \cdot \omega}{\eta_A}$	P in W M in N.m ω in rad/s η_A no units	η_A expresses the efficiency of the driven machine. M is the torque required by the driven machine.
Power drawn by the 3-phase motor	$P = \sqrt{3} \cdot U \cdot I \cdot \cos \varphi$	P in W U in V I in A	φ phase angle by which the current lags or leads the voltage. U armature voltage. I line current.
Reactive power drawn by the motor	$Q = \sqrt{3} \cdot U \cdot I \cdot \sin \varphi$	Q in VAR	
Reactive power supplied by a bank of capacitors	$Q = \sqrt{3} \cdot U^2 \cdot C \cdot \omega$	U in V C in μ F ω in rad/s	U = voltage at the capacitor terminals C = capacitor capacitance ω = rotational frequency of supply phases ($\omega = 2\pi f$)
Apparent power	$S = \sqrt{3} \cdot U \cdot I$ $S = \sqrt{P^2 + Q^2}$	S in VA	
Power supplied by the 3-phase motor	$P = \sqrt{3} \cdot U \cdot I \cdot \cos \varphi \cdot \eta$		η expresses motor efficiency at the point of operation under consideration.
Slip	$g = \frac{N_S - N}{N_S}$		Slip is the difference between the actual motor speed N and the synchronous speed N_S
Synchronous speed	$N_S = \frac{120 \cdot f}{p}$	N_S in min^{-1} f in Hz	p = number of poles f = frequency of the power supply

Parameters	Symbol	Unit	Torque and current curve as a function of speed
Starting current	I_D	A	
Rated current	I_N		
No-load current	I_O		
Starting torque*	M_D	Nm	
Run up torque	M_A		
Breakdown torque	M_M		
Rated torque	M_N		
Rated speed	N_N	min^{-1}	
Synchronous speed	N_S		

* Torque is the usual term for expressing the moment of a force.

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