

Type : 4EL160M4E-PC-BA-000

Date : 01.01.2023

Power [kW]	: 11.0	Efficiency Class	: IE4
Input Voltage [V]	: 400	Duty Cycle	: S1
Connection Type [Δ / Y]	: Δ	Service Factor	: 1.25
Frequency [Hz]	: 50	Frame Size	: 160M
Pole Number	: 4	Weight [kg]	: 99.5
Nominal Speed [rpm]	: 1470	Insulation Class	: F [155°C]
Nominal Current [A]	: 21.0	Temperature Rise	: B [80°K]
Nominal Moment [Nm]	: 71.5	Protection Class	: IP55
Nominal Efficiency [η]	: 93.3	Vibration Severity Grade	: A
Power Factor [cosφ]	: 0.81	Method of Cooling	: IC411 (TEFC)
Locked Rotor Current [Ia/In]	: 7.7	Direction of Rotation	: Bidirectional
Locked Rotor Torque [Ma/Mn]	: 3.0	Balance	: Half Key
Breakdown Torque [Mk/Mn]	: 3.6	Motor Thermal Protection	: PTC
Motor Color	: RAL 7031	Altitude Above Sea Level	: 1000m
Ambient Temperature	: -15°C / +40°C	Sound Pressure Level [dBA]	: 64

### ELECTRICAL DATA

Δ / Y	U [V]	f [Hz]	P [kW]	n [rpm]	I [A]	η [%100]	η [%75]	η [%50]	Cosφ	Cl
Δ	400	50	11.0	1470	21.0	93.3	93.5	93.3	0.81	IE4
Y	690	50	11.0	1470	12.1	93.3	93.5	93.3	0.81	IE4
Δ	460	60	11.0	1770	18.4	93.6	93.4	92.2	0.80	IE4
Δ	460	60	12.8	1765	20.9	93.6	93.8	93.6	0.82	IE4

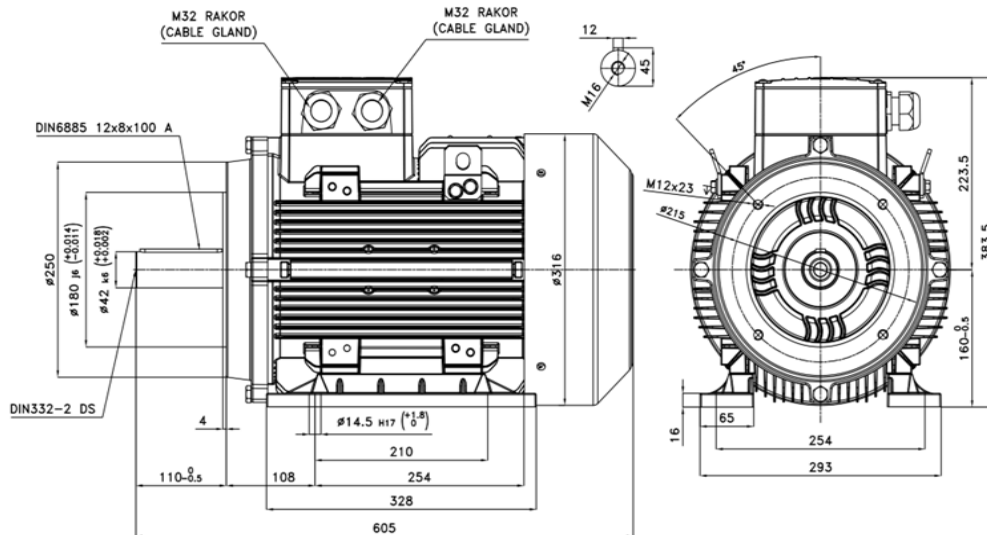
### MECHANICAL DATA

Moment of Inertia [kgm <sup>2</sup> ]	: 0.08600
Bearing [DS / NS]	: 6309ZZ / 6209ZZ
Frame Material	: Aluminum
Flange Type / Material	: B14 / Cast Iron
Cooling Fan Material	: Plastic
End Shield Material	: Aluminum

### TERMINAL BOX

Terminal Box Material	: Aluminum
Terminal Box Position	: Top
Terminal Box Cable Entry	: 2xM32x1.5
Terminal Box Blind Cap	: --
Contact Screw Thread	: M6

### MECHANICAL DIMENSIONS





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## TECHNICAL DATASHEET ACCORDING TO COMMISSION REGULATION (EU) 2019/1781 THREE PHASE INDUCTION MOTOR - SQUIRREL CAGE

Type : 4EL160M4E-PC-BA-000

Date : 01.01.2023

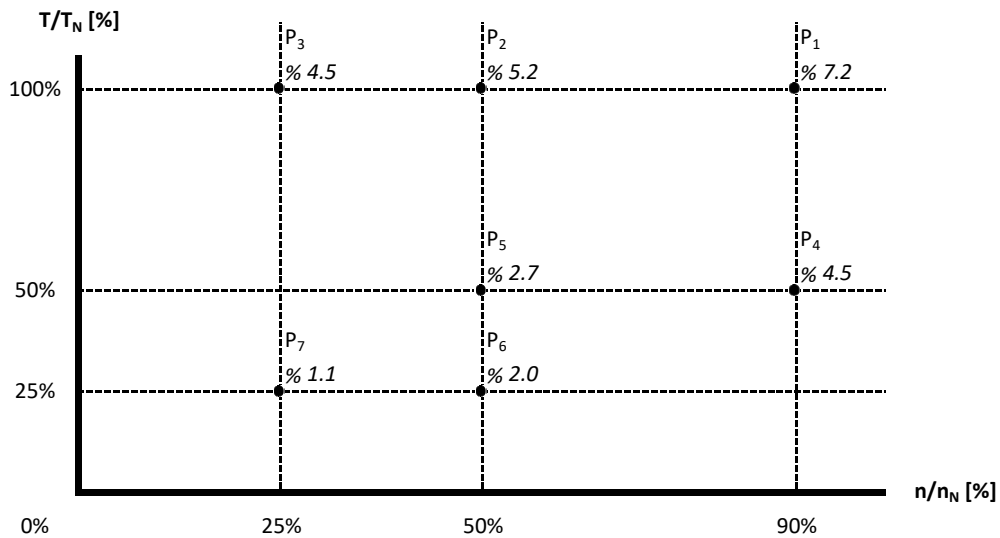
### NAMEPLATE DATA

Power [kW]	: 11.0	Nominal Speed [rpm]	: 1470
Nominal Voltage [V]	: 400	Nominal Current [A]	: 21.0
Connection Type [ $\Delta$ / Y]	: $\Delta$	Nominal Moment [Nm]	: 71.5
Nominal Frequency [Hz]	: 50	Nominal Efficiency [ $\eta$ %]	: 93.3

### THE POWER LOSSES AT SEVEN OPERATING POINTS ACCORDING TO COMMISSION REGULATION (EU) 2019/1781

Operating Point Number	Speed $n/n_N$ [%]	Torque $T/T_N$ [%]	Relative Power Losses $P_L/P_N$ [%]	Efficiency $\eta$ [%]
P <sub>1</sub>	90	100	7.2	92.5
P <sub>2</sub>	50	100	5.2	90.6
P <sub>3</sub>	25	100	4.5	84.7
P <sub>4</sub>	90	50	4.5	91.0
P <sub>5</sub>	50	50	2.7	90.3
P <sub>6</sub>	50	25	2.0	86.1
P <sub>7</sub>	25	25	1.1	84.9

### MAP OF RELATIVE POWER LOSSES $P_L/P_N$ [%]



Manufactured and tested in accordance with IEC 60034

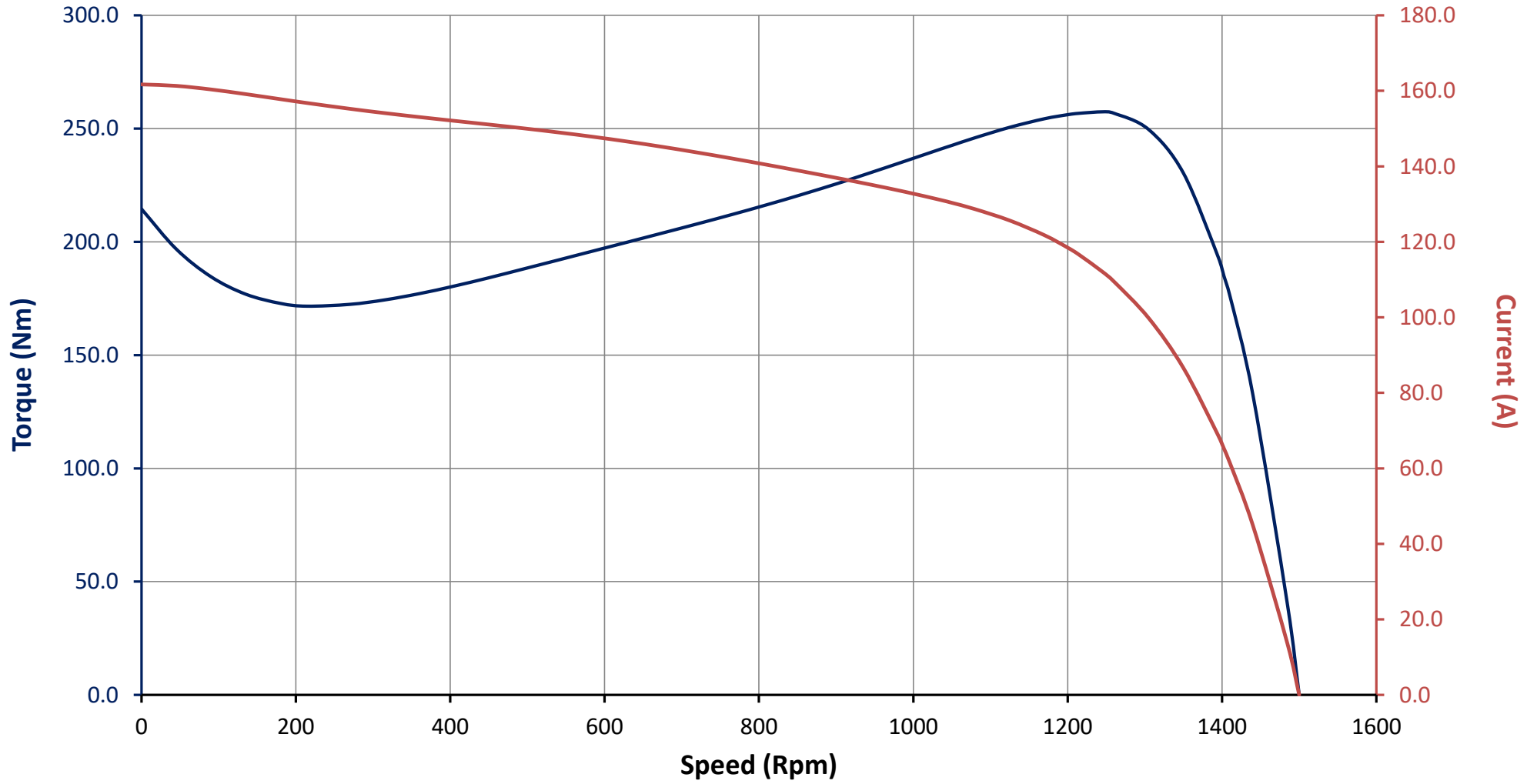
FR.AG.010 REV.NO: 04 REV.DATE: 01.01.2023

\*Technical data are subject to change! There may be discrepancies between calculated and rating plate values.

\*ELK Motor has right to change all the data without prior notice.

Motor Code : 4EL160M4E-PC-BA-000

### Torque and Current Curves Related to Speed



Motor Code : 4EL160M4E-PC-BA-000

### Performance Curves Related to Rated Output

