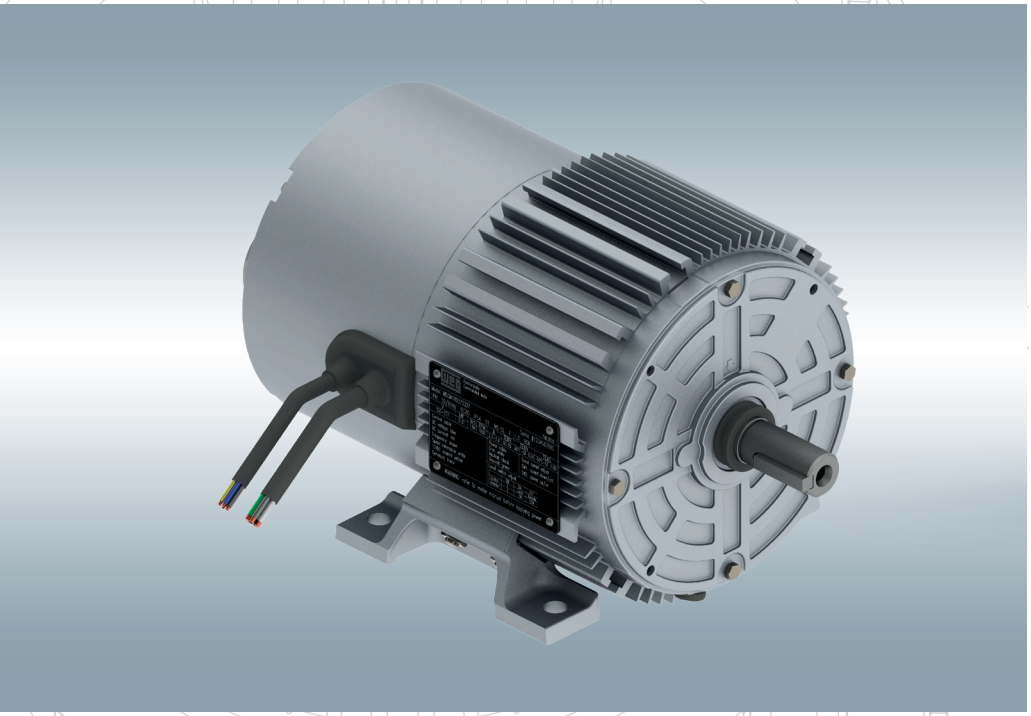
WECM

Electronically Commutated Motor

IEC MARKET



Global presence is essential, as much as understanding your needs.

Global Presence

With approximately 30.000 employees globally, WEG is one of the largest electric motor, electronic equipment and systems manufacturers worldwide. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees that the ***WECM motor*** is the right choice for your application and business, assuring safety, efficiency and reliability.

Availability is to have a global support network

Partnership is to create solutions that suits your needs

Competitive edge is to unite technology and innovation

WECM - WEG Electronically Commutated Motor

Standard Features

- Permanent Magnet, Electronically Commutated Motor
- Single-phase, 220 to 277VAC, 50/60Hz input
- Output power
  - 0,12 to 1,1kW at 1500, 1800 or 3000rpm
- IEC80, aluminum frame, degree of protection IP55
- Mounting: foot
- Ambient temperature
  - -20 to 40°C (TENV)[1]
  - -20 to 60°C (TEAO)[2]
- Total efficiency (motor + drive) – IE5[3]
- Vibration Grade A
- Direction of rotation CW/CCW (selectable)
- Continuous speed adjustment (200 to 1500/1800rpm and 500 to 3000rpm) by:
  - Tact buttons (local)
  - DC voltage (remote): 2 to 10VDC
  - DC current (remote): 4 to 20mA DC
  - Frequency (remote): 10 to 95%
- Local controls optically isolated
- With drain plug and 'V' ring sealing
- Sealed for life bearings
- Drive-end bearing cap
- Power and control cables 500mm long
- Electronic protection: overload, over temperature and locked-rotor.
- Fire mode (Override & Maximum speed mode)

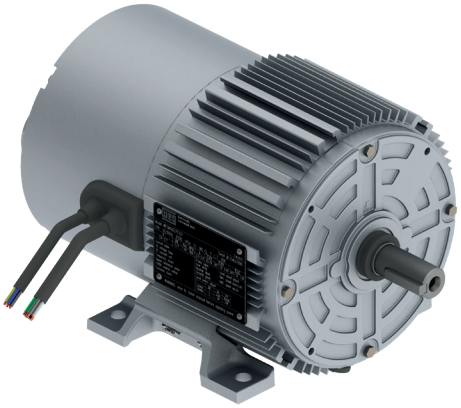


Figure 1. Foot mounting

Notes:

1. *Totally Enclosed, Non-ventilated. Output limited to 0,65kW. Refer to WEG for electrical data.*
2. *Totally Enclosed, Air Over rated. Minimum airflow over motor frame and drive cover 5m/s.*
3. *Direct method - Input-Output IE levels according to 60034-30-1 and 60034-30-2.*

Optional & Special Features

- Passive PFC (Power Factor Correction)[4]
- Pad mounting (4 x 90° or 3 x 120°) and FF-165 flange
- Slinger seal for vertical shaft-up mounting
- 115V input power supply (up to 0,55kW)
- Decentralized drive and motor mounting
- Customized cable lengths
- Customized shaft ends
- Double shaft ends (only with decentralized drive version)
- External controller with display to adjust maximum and instantaneous speed values

Figure 2. Pad mounting (4 x 90°)

Figure 3. Pad mounting (3 x 120°)

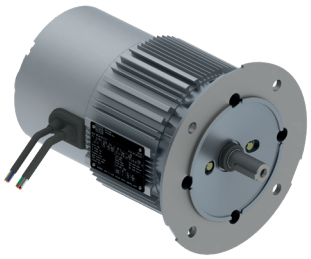


Figure 4. FF-165 flange mounting

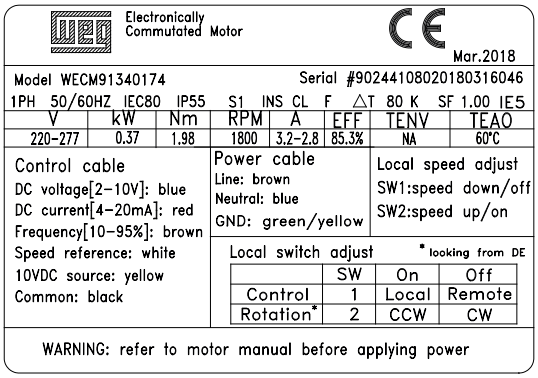
Standards

WECM motors comply with the latest versions of the following standards and regulations:

- EN 60034-1: Rotating electrical machines - Part 1: Rating and performance
- EN 60034-2-1: Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)
- EN 60034-5: Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification
- EN 60034-6: Rotating electrical machines - Part 6: Methods of cooling (IC code)
- EN 60034-7: Rotating electrical machines - Part 7: Classification of types of constructions, mounting arrangements and terminal box position (IM code)
- EN 60034-8: Rotating electrical machines - Part 8: Terminal markings and direction of rotation
- EN 60034-9: Rotating electrical machines - Part 9: Noise limits
- EN 60034-14: Rotating electrical machines - Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher - measurement, evaluation and limits of vibration
- IEC TS 60034-30-2: Rotating electrical machines - Part 30-2: Efficiency classes of variable speed AC motors (IE-code)
- IEC 60072-1: Dimensions and Output Series for Rotating Electrical Machines Part 1: Frame Numbers 56 to 400 and Flange Numbers 55 to 1080
- EN 60204-1: Safety of machinery - electrical equipment of machines - Part 1: General requirements
- IEC 61800-3: Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods
- IEC 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions
- IEC 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16A per phase and not subject to conditional connection
- IEC 61800-5-1:2007: Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - Electrical, thermal and energy
- 2017/2102 (amending 2011/65/EU) - RoHS
- 2014/35/EU - The Low Voltage Directive (LVD)
- 2014/30/EU - Electromagnetic Compatibility (EMC) Directive

Notes:
4 - WECM require the use of an external filter (passive PFC) to comply with the harmonic current emissions requirements of EN 61000-3-2. Refer to WEG for further details.

Rating Plate



Electrical Data

- Nominal performance data for WEG Electronically Commutated Motors:

Cooling	220V / 1500rpm					220V / 1800rpm					220V / 3000rpm				
	Model	kW	FLC In (A)	Torque (Nm)	Eff [%]*	Model	kW	FLC In (A)	Torque (Nm)	Eff [%]*	Model	kW	FLC In (A)	Torque (Nm)	Eff [%]*
TENV or TEAO	A2	0,12	1,4	0,76	83,0	A1	0,12	1,4	0,64	83,1	A1	0,12	1,4	0,38	77,5
	A3	0,18	1,8	1,15	83,4	A2	0,18	1,9	0,95	83,5		0,18	1,9	0,57	81,4
	A4	0,25	2,3	1,59	84,0	A3	0,25	2,3	1,33	84,1		0,25	2,4	0,80	82,3
	B	0,37	3,4	2,36	85,2	A4	0,37	3,5	1,96	85,3	A4	0,37	3,3	1,18	83,3
TEAO **	D	0,55	4,8	3,50	86,7	B	0,55	4,7	2,92	86,8	B	0,55	4,8	1,75	84,6
	E	0,75	5,8	4,77	88,2	D	0,75	5,7	3,98	88,2	C	0,75	5,9	2,39	86,3
		1,1	8,9	7,00	89,2	E	1,1	8,9	5,84	89,7		1,1	8,7	3,50	87,8

*Note: * Total efficiency (motor + drive) according to direct method - Input-Output*
*** 0,55kW solution up to 0,50kW is also TENV, 0,75kW solution up to 0,65kW is also TENV.*

Mechanical Data

External dimensions (in mm)

Model	Net Weight Kg***	LC	LD	L[1,2,3]	L[4]	Package dimensions (L x W x H in mm)	
						1,2,3	4
A1	5,2	90	75	245	258	370 x 225 x 220 (40 motors / pallet[5])	365 x 260 x 270 (36 motors / pallet[5])
A2	5,8						
A3	6,4						
A4	7,7						
B	9,2	110		265	278		
C	9,6		95	285	298		
D	9,9	115		290	303		
E	11,7	135		310	323		

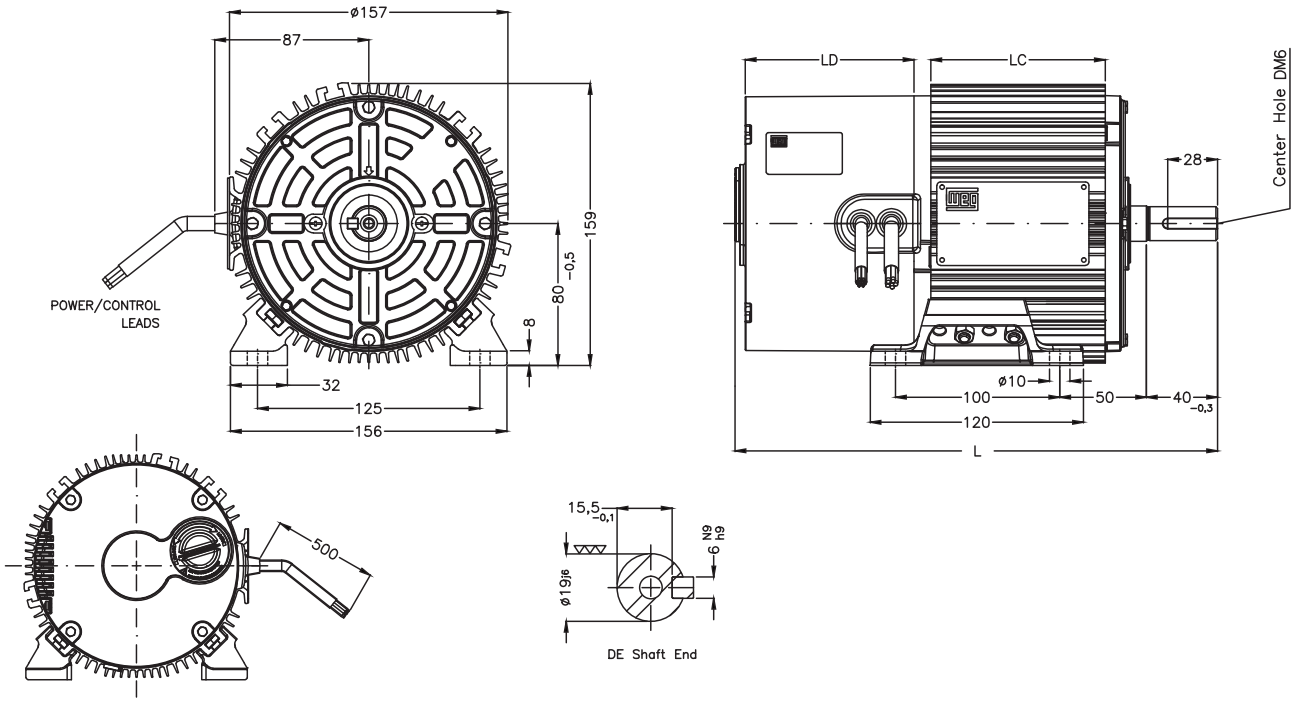
Notes:

1. *Foot mounting;*
2. *Pad mounting (4 x 90°);*
3. *Pad mounting (3 x 120°);*
4. *FF-165 flange mounting;*
5. *Pallet dimensions (L x W x H): 1200 x 800 x 1120mm; 22 pallets / 20ft container - 44 pallets / 40ft container;*
6. *LD is the dimension of the drive in decentralized solution.*

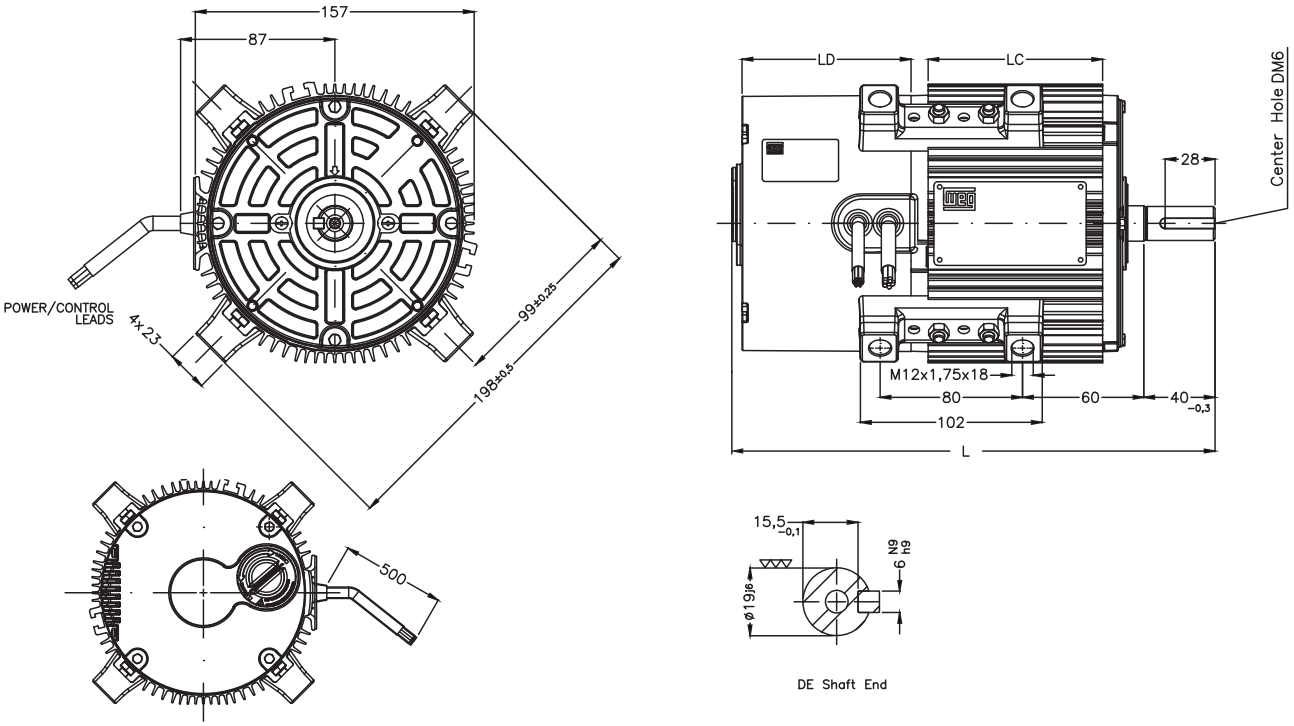
*** approximate weight subject to change without notice.*

Mechanical Data (dimensions in mm)

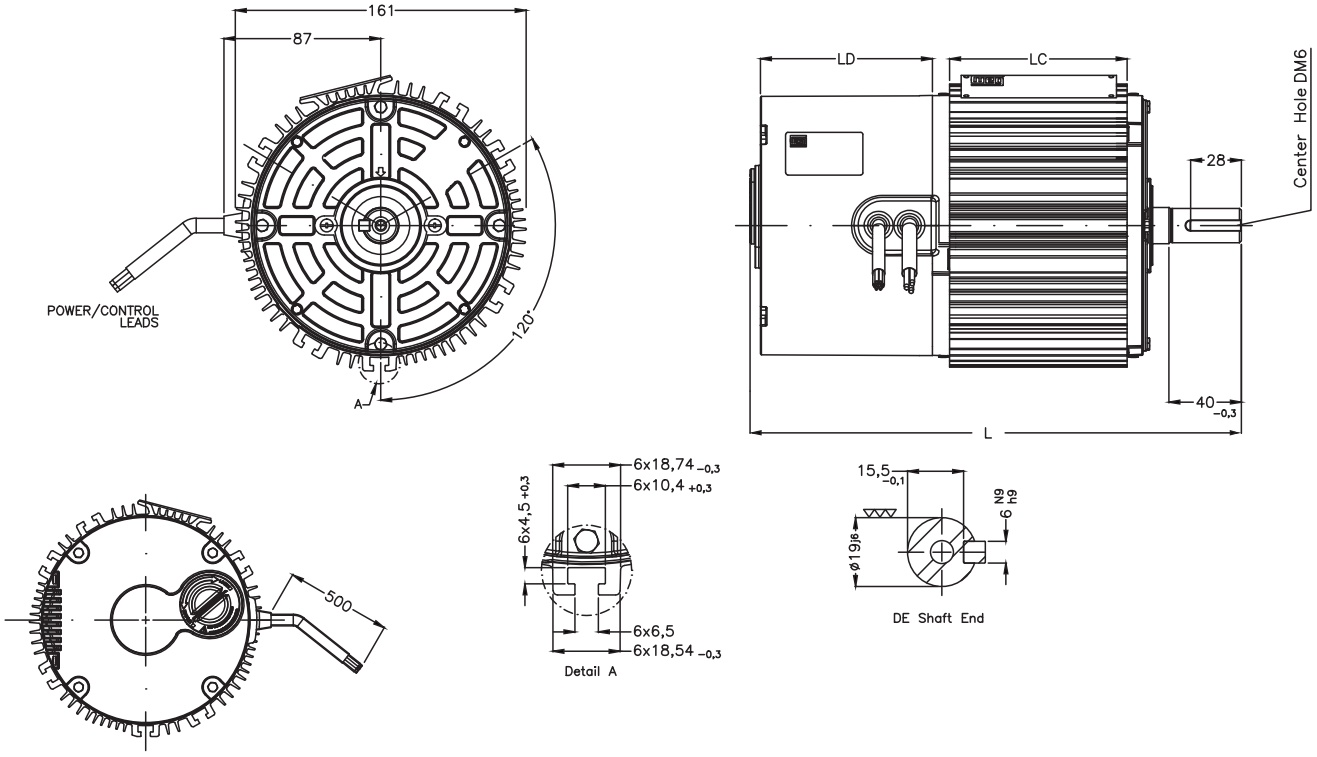
1. Foot mounting



2. Pad mounting (4 x 90°)



3. Pad mounting (3 x 120°)



4. Flange mounting (FF-165)