COEL

F

FK

SW

FM

Brake

# Electric Motors

General catalogue 2009 rev1

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# INDEX

# Company profile

Coel is a dynamic company having more than 30 years of experience in manufacturing electric motors. Since 1976 we design and produce brake motors having today one of the widest range available on the market.

More than the standard products we design and produce customized versions.
Coel is lean and flexible. All the procedures and production systems are dedicated to the total quality continue research. The “pull” production system guarantees fast and punctual delivery times for any kind of product produced.

All the works are made by us with specialized know how and high level technologies.
Our strength is our will to improve.

TVT America is Coel's support arm for the North American market, offering 15 years of experience in the representation of Italian Power Transmission manufactures and 30 years in the industry in North America. With an assembly center in the middle of North America, TVT can assemble and ship many sizes of Coel brake motors within 24hrs and deliver to 80% of the North American market by 2 day ground transportation.

# Mission

The globalization has defined the need to create a new approach on the market.
To be different in the production and relation methods becomes the peculiar objective from which extrapolate the value of products and services.

COEL looks at the total clients satisfaction being not only a qualified supplier but also a partner for the constant research and development of solutions more and more evolved, qualitative, economic and exclusive.

The exclusivity is the main element to value the product and the service. Exclusivity in the methods, services, in the pursuit of the objectives, this is our must. COEL has defined the innovation as determining value involved into the production processes. The valuation of our inventiveness, of individual skills, the contribution that each one of us gives to our products, are the points defining the personality of COEL and all that we make.

TVT America supports COEL's global mission in the North American market. TVT strives to listen carefully to the customer, provide a cultural and technical bridge between COEL and the North American market, and deliver solutions that exceed customer expectations.

# GENERAL FEATURES

All Coel motors are designed to ensure maximum reliability and high level performances.

All the components we use are tested and approved for severe duty applications.

All the stators are made with low loss laminations in order to obtain an high efficiency and high performances of our motors. Windings are prepared as standard with insulation phase by phase for frequency inverter duty.
Insulance is in F class or H on request.

The brake discs are designed in order to ensure high reliability and low noise operation in every kind of duty cycle.

The frictional materials we use guarantee high performance , low consumption, and anti-sticking tested.

All the electromagnets are encapsulated with H thermal class epoxy resin to .
This guarantees a complete protection (IP67) and a consequent long life.

The shafts on brake motors are strongly stressed in terms of torsional torque due to frequent starts and brakings.
For this reason we use high resitance steels or special steel types on request.

# DESIGNATION

When you order a COEL motor it's necessary to define some parameters:

| | |
|---|---|
| 1) SERIES | F, FK, FKDF, SW, FM |
| 2) FRAME SIZE | 56 - 315 |
| 3) IM TYPE | B5, B14, B3 or SPECIAL |
| 4) POLES | 2 TO 24 SINGLE OR DOUBLE |
| 5) POWER | 0.04 TO 200 kW |
| 6) VOLTAGE/Hz | 24 TO 690 - 50/60 |
| 7) BRAKE VOLTAGE | AC or DC / 1 or 3 phase |
| 8) IP LEVEL | 54 TO 66 (depending on motor types) |

All Coel motors can be equipped with several options better described in the dedicated sections of this catalogue ( see series F, FK, FKDF, SW, FM).
All the options must be well described on purchase orders or enquiries.
In case of special execution motors, Coel will provide a dedicated code to identify the product.

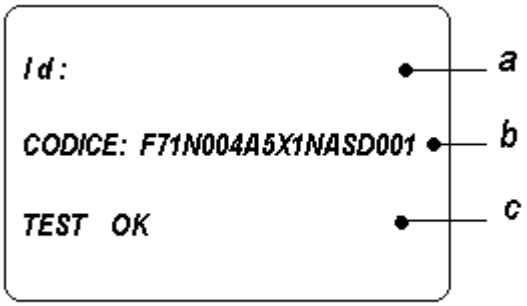
List of main options available (for additional options not here specified, please contact COEL):

| TYPE | AVAILABLE FOR (Frame or series) |
|---|---|
| Reduced Flange | Gr 71-160 |
| Reduced Shaft | Gr 56-315 |
| Special Shaft | Gr 56-315 |
| R level balanced rotor | Gr 56-315 |
| Lateral Hand Release | FK |
| Double Shaft End | Gr 56-315 |
| Protection Degree IP55 | F-FK-FM |
| Protection Degree IP56 | SW |
| Protection Degree IP66 | SW |
| Painting | Gr 56-315 |
| "P" Special Rotor | Gr 56-315 |
| Separated Brake Supply | Gr 56-315 |
| Special Frequency/Voltage | Gr 56-315 |
| Tropical Insulation | Gr 56-315 |
| H Class Insulation | Gr 56-315 |
| Anti Condensation Resistor | Gr 56-315 |
| Thermal Protectors (PTO) | Gr 56-315 |
| PTC | Gr 56-315 |
| Motors B3 with Lateral Terminal Box | Gr 56-315 |
| Progressive Start Up and Braking | FK |
| Positive Brake Execution | Gr 56-132 |
| Patented KK Release Execution | Gr 71-90 |
| cCSAus Certified Version | F-FK |
| CCC certification | F-FK-SW |

# IDENTIFICATION

All Coel motors are provided with a name plate showing several characteristics and a label for the identification of the motor.

The Main name plate is applied on the case or on the fan cover of the motor while the ID label is applied inside the terminal box.


1) Motor type and series
2) Date of production
3) IP protection level
4) Insulation level
5) Duty
6) Brake voltage (in case of same voltage of the motor we'll write "V AS MOTOR)
7) Power factor (in case of 2 speeds motor it's related to high speed)
8) RPM (in case of 2 speeds motor it's related to high speed)
9) Power factor (in case of 2 speeds motor it's related to low speed)
10) RPM (in case of 2 speeds motor it's related to low speed)
11) Hz related to Volts indicated in position 15/17
12) kW related to Volts indicated in positions 15/17
13) Hz related to Volts indicated in position 16/18
14) kW related to Volts indicated in positions 16/18
15, 16,17, 18, 19) Volts values depending on motor type 19, 20, 21, 22) Amps values depending on motor type

a) ID number - see this number to indentify the motor unit
b) Complete Coel code - with this code we can know all the technical details of the motor
c) Testing approval

# PERFORMANCES

Power Rating: refers to the mechanical power measured at the shaft expressed in Watts or in Horsepower (HP).

Voltage rating: refers to the tension to apply to the motor terminals and it's indicated on the motor rating plate

Power factor: in the three-phase electric power supply system it corresponds to the angle between voltage vector and current vector; it is indicated with the Greek character "fi" and its cosine is the value that identifies the power factor.

Synchronism speed: it is obtained by the formula

$$n° = \frac{f120}{p} \ rpm / min$$

f = power supply frequency
p = number of poles

Starting torque: the maximum torque that the motor can provide with a locked rotor, with voltage rating feed and rated frequency.

Maximum torque: refers to the maximum torque the motor can supply while it operates with nominal voltage and frequency

Torque rating: refers to the torque sipplied at nominal rpm and power and can be obtained with the following formula

$$Mn = 9554 \frac{Pn}{n} \ (Nm)$$

*Pn = is the rating expressed in KW*
*n = is the speed of rotation expressed in revs per*

# DUTY

The inducion motors must operate according to the duty specified on the name plate or on the technical specifications; the following ones are the most common duty cycles

Continuous duty (S1): The motor operates with constant load for a period of time sufficient to achievethe thermal equilibrium.

Limited duration duty (S2): the motor operates at a constant duty for a limited of time insufficient to reach a thermal equilibrium. The remaining period of the cycle is a rest period, during which the motor cools down to the ambient temperature again.

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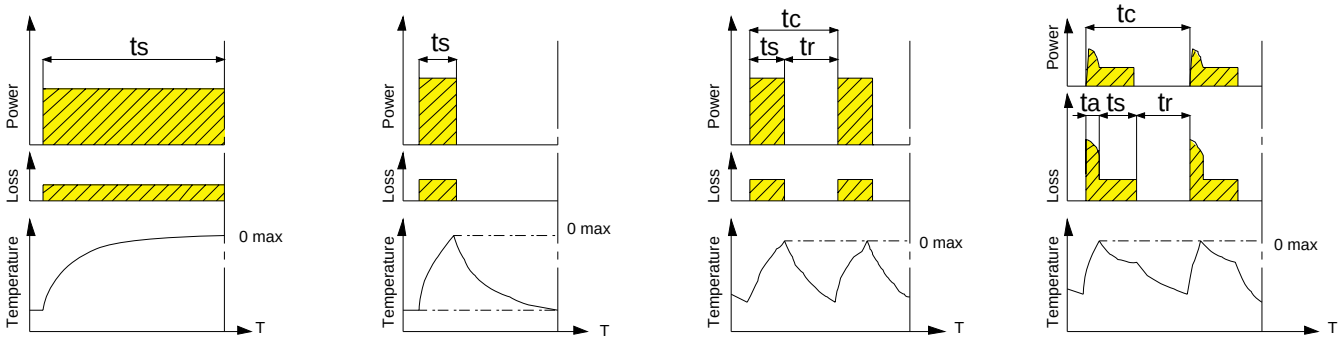
Periodic alternating duty (S3): the motor operates according to a cycle including a period of time at a constant load (ts) and the rest time (tr). The synthetic indication of duty is provided by the percentage intermittence ratio compared to the length of reference time which is normally 10 minutes (ex. 15% - 10 min).

$$\text{intermittence ratio} = \frac{ts}{ts + tr}\ 100\ (\%)$$

Periodic alternating duty with startings that affect the heating of the motor (S4): the motor operates according to a cycle that includes a notable start-up time (ta), operating time at a constant load (ts) and a reest time (tr). In this case, the synthetic condition of the duty must be accompanied by the number o f inserts per hour.

$$\text{intermittence ratio} = \frac{ta + ts}{ta + ts + tr}\ 100\ (\%)$$




| | |
|---|---|
| *tc* | *Cycle duration* |
| *ta* | *Start-up and acceleration time* |
| *ts* | *Operating time at a constant power* |
| *tr* | *Rest time* |
| *0max* | *Maximum temperature reached* |

# MOTORS OPERATING AT 60Hz

A motor coiled for a certain tension at 50 Hz can be used also at 60 Hz without modifications.
In this case, the motor data change as indicated in the following tab:

| Motor Coiled for 50Hz | Connected at 60Hz | Data at 60 Hz as % of values at 50 Hz | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | power | rpm | $I_N$ | $I_S/I_N$ | $T_N$ | $T_S/T_N$ | $T_{max}/T_N$ [1)] |
| 220 V | 220 V | 100 | 120 | 98 | 83 | 83 | 70 | 85 |
| | 255V | 115 | 120 | 100 | 100 | 96 | 95 | 98 |
| 380 V | 380 V | 100 | 120 | 98 | 83 | 83 | 70 | 85 |
| | 415 V | 110 | 120 | 98 | 95 | 91 | 85 | 93 |
| | 440 V | 115 | 120 | 100 | 100 | 96 | 95 | 98 |
| | 460 V | 120 | 120 | 100 | 105 | 100 | 100 | 103 |
| 400 V | 380 V | 100 | 120 | 100 | 80 | 83 | 66 | 80 |
| | 400 V | 100 | 120 | 98 | 83 | 83 | 70 | 85 |
| | 415 V | 105 | 120 | 100 | 88 | 86 | 78 | 88 |
| | 440 V | 110 | 120 | 100 | 95 | 91 | 85 | 93 |
| | 460 V | 115 | 120 | 100 | 100 | 96 | 95 | 98 |
| | 480 V | 120 | 120 | 100 | 105 | 100 | 100 | 100 |
| 415 V | 415 V | 100 | 120 | 98 | 83 | 83 | 70 | 85 |
| | 460 V | 110 | 120 | 98 | 95 | 91 | 85 | 94 |
| | 480 V | 115 | 120 | 100 | 100 | 96 | 95 | 98 |
| 500 V | 500 V | 100 | 120 | 98 | 83 | 83 | 70 | 85 |
| | 550 V | 110 | 120 | 98 | 95 | 91 | 85 | 94 |
| | 575 V | 115 | 120 | 100 | 100 | 96 | 95 | 98 |
| | 600 V | 120 | 120 | 100 | 105 | 100 | 100 | 103 |

Performance, power factor and the over-the-limit temperature will more or less be similar to the ones for 50 Hz

$I_N$ = rated current
$I_S/I_N$ = start up current/rated current
$T_N$ = nominal torque
$T_S/T_N$ = maximum torque/torque rating
$T_{max}/T_N$ = start up torque/torque rating

# IP LEVEL PROTECION

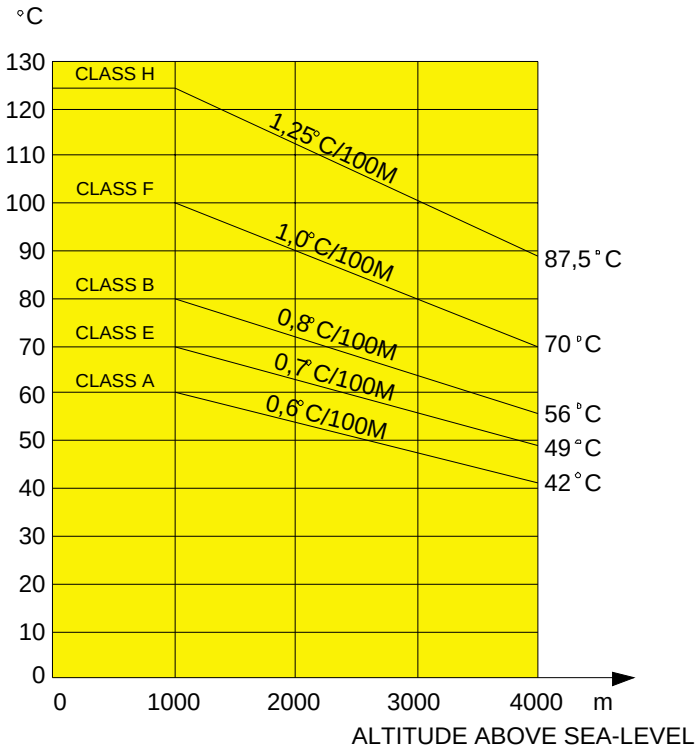
The electric machines are marked with a protection level (IP) - IEC34-5 (EN60034-5)

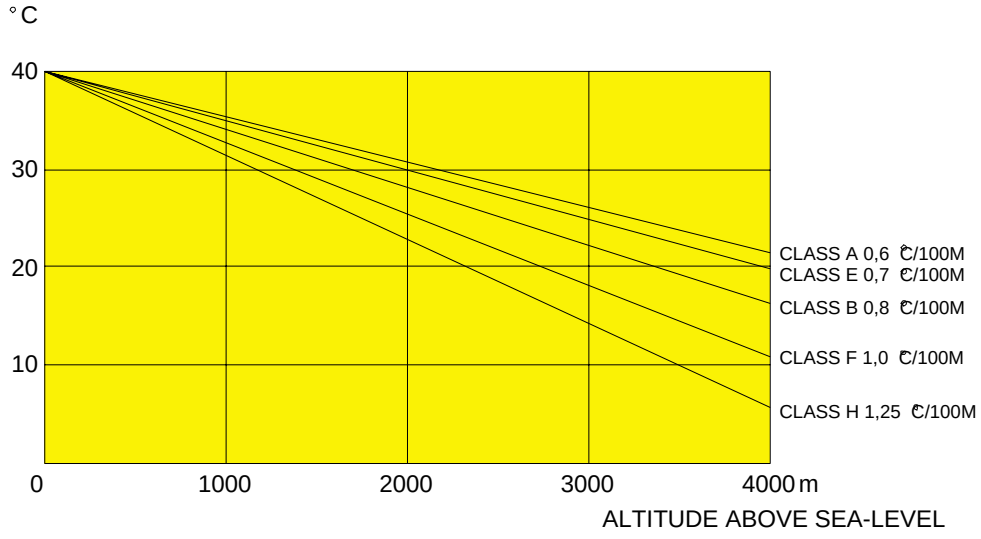
- F / FK / FM series motors are IP54 as standard and higher on request
- SW series motors are IP56 or IP66 as standard

| IP Level 1st Digit (Solids) | |
|---|---|
| 0 | No protection |
| 1 | Protection from solids ≥50mm diameter |
| 2 | Protection from solids ≥12.5mm diameter |
| 3 | Protection from solids ≥2.5mm diameter |
| 4 | Protection from solids ≥1mm diameter |
| 5 | Protection from dust. No harmful effects. |
| 6 | Complete protection from ingress of dust. |

| IP Level 2nd Digit (Liquids) | |
|---|---|
| 0 | No protection |
| 1 | Protection from vertically falling water drops. |
| 2 | Protected from falling water at 15º vertical. |
| 3 | Protected from water sprayed at 60º |
| 4 | Protected for water splashed |
| 5 | Protected for water projected in jets. |
| 6 | Protected for water in powerful jets. |
| 7 | Protected for temporary immersion in water. |
| 8 | Protected for continuous immersion in water. |

# OPERATION IN RELATION TO AMBIENT CONDITIONS




Changes in temperature of cooling air depending on altitude necessary for maintaining the excess temperature, valid up to 1000m, also for altitudes between 1000 and 4000m.

# CERTIFICATES


UNI EN ISO 9001-2000 CERTIFICATION


cCSAus CERTIFICATE in conformity to norms UL 1004 and CSA C22.2 No.10


IP66 protection certificate valid for SW series motors


EC declaration of conformity valid for all COEL motors

# REFERENCE NORMS

| IEC | TITLE | CENELEC | CEI/UNEL | BS | NFC | DIN/VDE | DEC |
|---|---|---|---|---|---|---|---|
| 34-1 | Ascribed and operating features | *EN60034-1* | *CEI2-3* | *BS499-101* | *NFC51-111* | *VDE0530-1* | *UNE 201131-95* |
| 34-2 | Determination of losses and performance | *HD532* | *CEI2-6* | *BS4999-34* | *NFC51-112* | *VDE0530-2* | *UNE 20116-74* |
| 34-5 | Classification of protection levels | *EN60034-5* | *CEI2-16* | *BS4999-20* | *NFC51-115* | *VDE0530-5* | *IR-89 20111-5* |
| 34-6 | Cooling methods | *EN60034-6* | *CEI2-7* | *BS4999-21* | | *DIN IEC 34-6* | *UNE 20125-741* |
| 34-7 | Constructive forms and assembly arrangement | *EN60034-7* | *CEI2-14* | *BS4999-22* | *NFC51-117* | *DIN IEC 34-7* | *UNE 20112-1-74 20112-2-74* |
| 34-8 | Identification of farthest point and rotation direction | *HD53.8 S4* | *CEI2-8* | *BS34999-3* | *NFC51-118* | *VDE0530-8* | *UNE 20113-8-96* |
| 34-9 | Noise levels | *EN60034-9* | *CEI2-24* | *BS4999-51* | *NFC51-119* | *VDE0530-9* | *UNE 20121-75* |
| 34-12 | Starting features of single speed motors fed by 660V tension | *EN60034-12* | *CEI2-15* | *BS4999-112* | | *VDE0530-12* | *UNE 20162-83* |
| 34-14 | Mechanical vibrations in machines with axis height > 56mm | *HD53.14 S1* | *CEI2-23* | *BS4999-50* | *NFC51-111* | *DIN ISO 2373* | *UNE 20180-86* |
| 72-1 | Dimensions and power ranges in machines between 56 and 400 and flanges between 55 and 1080 | *HD231* | *UNEL 13113 UNEL 13117 UNEL 13118* | *BS4999-10* | *NFC51-110 NFC51-120* | *DIN42673 DIN42677* | *UNE 20106-2-74 20106-240-80 20106-2-74 20106-2-IC-80* |

# RECTIFIERS FOR DC BRAKES

All the motors fitted with DC brake are supplied with a rectifier into the terminal box or mounted on one of the cable glands holes of the terminal box. All rectifiers are protected against the over-voltages.
The rectifier value voltage input of single speed motors is the same of the delta connection motor voltage.
Two speed motors are fitted as standard with two terminal boards (separated brake supply). In this case the voltage to the “AC 1ph. In” terminals of the rectifiers will be the same of the motor with maximum limit of 500VAC.
In case of separated brake supply for single speed motors or for special needs or for motors with voltage over 500VAC, the voltage of the brake has to be specified by the customer.
Different types of rectifiers are available including types with peack in the starting or automatic switching for fast braking.
Please contact COEL for further details on rectifiers.

## AC and DC BRAKES
## TIME RELEASE

The F series AC brake is suggested for applications in which a very fast response of the brake and high braking torque values are necessary. F brakes are also availbale with DC electromagnets.
The FK series with DC brake will be a good choice normal duty applications.
Indicative values of time response of brakes are following

| ***Type*** <br> ***Tipo*** | ***AC brake*** <br> **(ms)** | ***DC brake*** <br> **(ms)** | ***DC brake (fast connection)*** <br> **(ms)** |
|---|---|---|---|
| **F71-80-90-100** | **7** | **70** | **15** |
| **F-112** | **9** | **70** | **20** |
| **F132-160-180-200** | **12** | **80** | **25** |
| **FK56-63-71-80** | **-** | **60** | **25** |
| **FK90-100-112** | **-** | **70** | **30** |
| **FM/SW 225 - 315** | **-** | **1400** | **100** |

*- SW series motors are fitted with FK brakes for frame 90/100 and F for frames 112/160 .*
*- For double brakes FKDF (stage application) please see related section of this catalogue*

*la*

***Braking times can be indicatively determinated by the following formula:***

$$\frac{J\,tot \times n}{9.55\,(Mf \pm Mload)} + \frac{tx}{1000}$$

where
dove

**Jtot**: inertia moment at the motor shaft ($Kgm^2$)

**n:** speed r.p.m.

**Mf**: braking moment (Nm)

**Mload:** resistent moment to the load applied (Nm), positive or negative depending on concordance with braking moment.

**tx:** brake time response (ms)

# MOTORS WITH FORCED VENTILATION

All COEL motors can be fitted with forced ventilation. This solution increases the performance of the motors. It's necessary when the motors are driven by inverter with frequency lower than 20Hz or for motors with frequent starts and brakings (contact COEL for further details)
The forced ventilation can be mounted in line (standard) or on the lateral side of the motor.
On FK and FM motors, the overall dimensions are the same than standard while for F series the lenghts change as described in the tab "2".

**Tab1 - Construction**

| Type of aux. fan | F | FK | FM | SW |
|---|---|---|---|---|
| In Line type | s | s | s | r |
| Lateral type | $s^1$ | n | n | n |
| V230/50-60 1ph | s | s | s | r |
| V400/50-60 3ph | $r^2$ | n | r | $r^3$ |
| V115/60 1ph | r | r | r | r |

a= available
n= not available
r= on request
s= standard solution
$s^1$= standard on frames 180 and 200 only
$r^2$= on request but only frames 112 to 315
$r^3$= on request but only frames 112 to 315

**Tab2 - F series length**

| Frame | L | Frame | L |
|---|---|---|---|
| F71 | 350 | F112 | 540 |
| F80 | 411 | F132S | 660 |
| F90S | 455 | F132M | 705 |
| F90L | 480 | F160M | 825 |
| F100 | 525 | F160L | 870 |

# MOTORS WITH ENCODERS

All COEL motors can be fitted with encoder. A standard has not been defined as it's possible to require the mounting of different ones.
Special flange or internal encoders without modification of motors dimensions are also available

For further information contact TVT AMERICA

## Possible characteristics of encoders

| Characteristic | F | FK | FM | SW |
|---|---|---|---|---|
| Line driver | o | o | o | o |
| Push pull | o | o | o | o |
| V5 to 24 | o | o | o | o |
| IP54 | o | o | o | x |
| IP66 | o | o | o | o |
| Incremental | o | o | o | o |
| Absolute | o | o | o | o |

o= available / disponibile
x= not available / non disponibile

# **F** SERIES brake motors

F type motors are closed and externally ventilated. The brake groups and all the motor parts are designed and made by Coel.

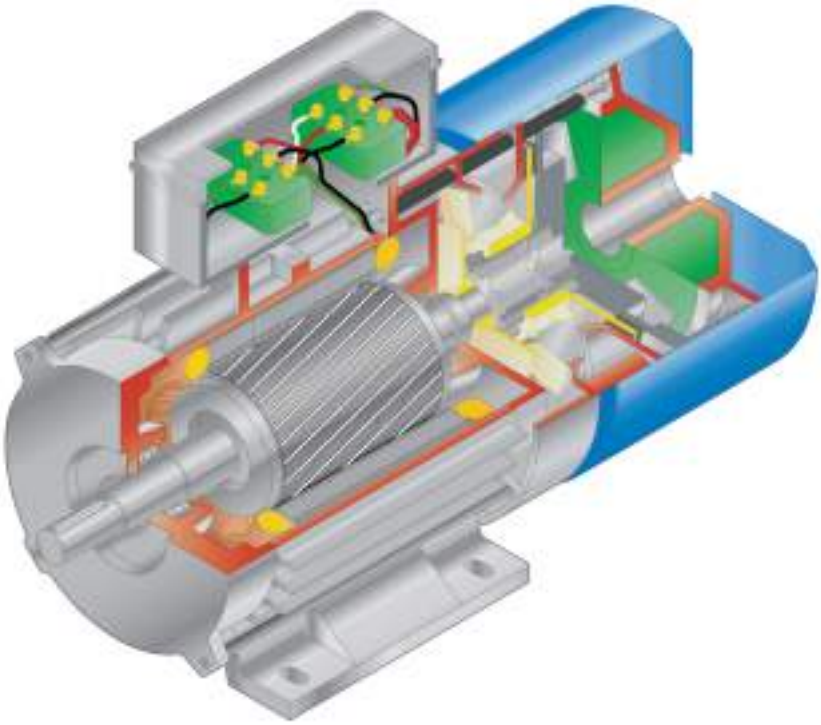
The brake group is supplied on series with “3ph. AC” electromagnet but DC version is also available on request. The F series motors can be driven by inverter but in this case the brake supply must be separated from the one of the motor. The motor frames of motors are in die cast pressed aluminum from 71 to 160 frame and in cast iron for frames 180 and 200.

The shafts of frames 71 to 132 are fitted with an hexagon on the back side for the manual rotation of the shaft.
The brake can be manually released with a special screw supplied with the motor. The friction tracks are in cast iron and auto ventilated. The F series motors are designed for very heavy duty cycles, quick braking action, constant braking time

## *Standard features*

- Disk brake without axial sliding of the shaft.
- Electromagnets encapsulated in resin with IP66 protection
- Adjustment of braking torque within very large values.
- Three phase electromagnet as standard
- F motors are supplied with screw for the manual release of the brake, thickness gauge for the adjustment of the magnetic gap of the brake group and hexagon (71 to 132 only) on the rear end of the shafts, for its manual rotation.

# **F** SERIES brake motors

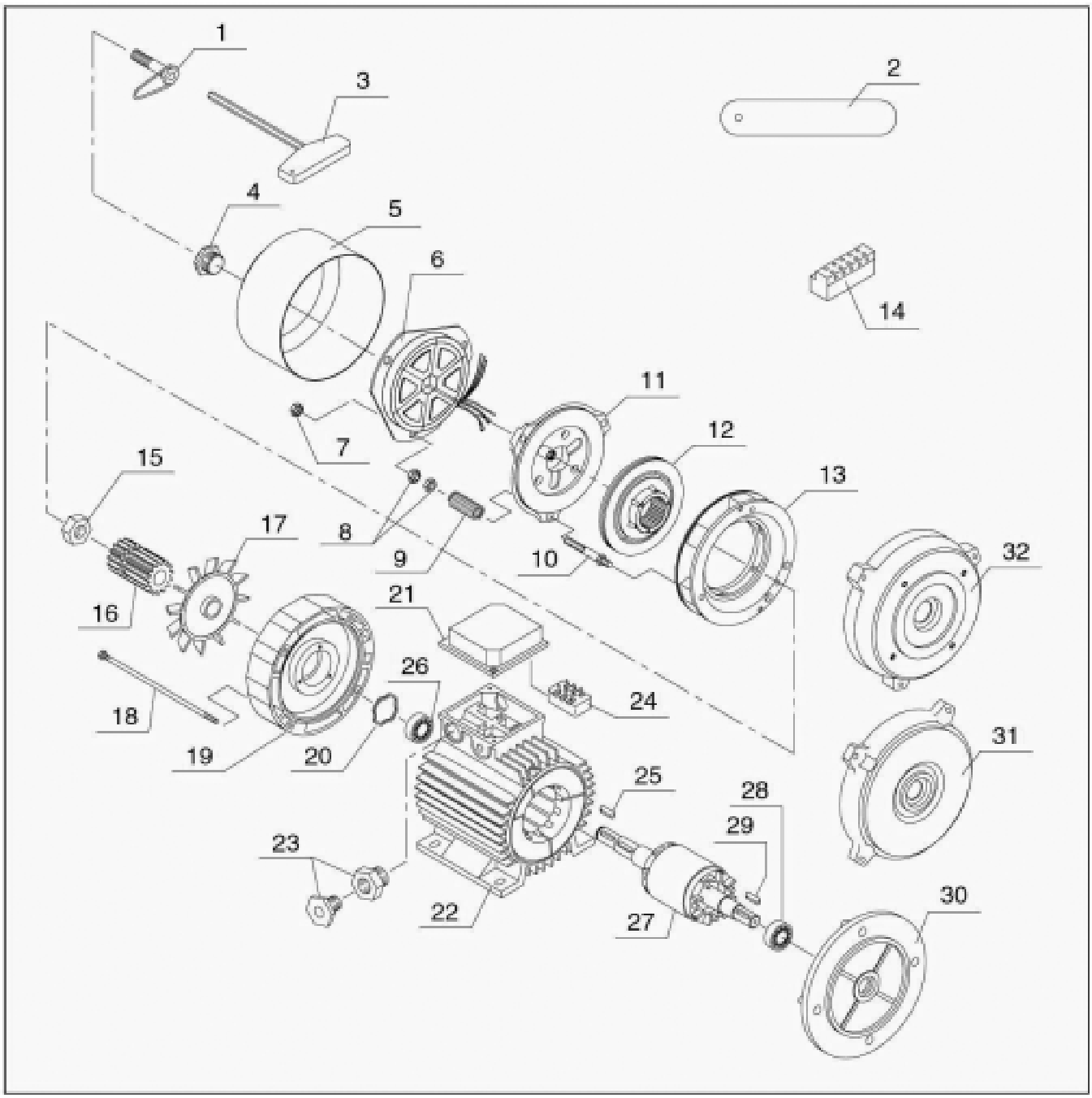


F type brake motors are available with many options and in different configurations.
The following are just some of the standardized available options.
For special requirements, please contact TVT.

## POSSIBLE PRODUCT CONFIGURATIONS

- Foot mounting B3 execution
- Foot and flange mounting execution
- B5 or B14 flange execution
- B5 reduced flange from frame 71 to 160
- B14 reduced flange from frame 71 to 100
- Reduced shaft
- Double end shaft
- Special shaft
- Motors B3 with lateral terminal box (up side as standard)
- Customized executions
- Special windings
- Version with forced ventilation
- Separated brake supply
- DC brake
- AC low noise patented system (standard for DC)
- H class winding insulation
- IP 55 protection
- Special “P” rotor for starting torque increasing
- Special painting
- Thermal protectors PTO or PTC
- Anti condensation heaters
- R or S level balanced of the rotor
- With encoder

# F Spare parts




| | | | |
|---|---|---|---|
| 1 | Manual release screw | 18 | Drawrods with nuts |
| 2 | 0,3 mm thickness gauge | 19 | Brake side shield |
| 3 | Key for manual rotation | 20 | Compensation ring |
| 4 | Cap  locking screw | 21 | Terminal box |
| 5 | Brake protection cover | 22 | Motor case |
| 6 | Electromagnet | 23 | Cable gland |
| 7 | Magnet locking nut | 24 | Terminal board |
| 8 | Adjustment nuts | 25 | Brake side keyo |
| 9 | Brake springs | 26 | Brake side bearing |
| 10 | Guide stud bolts | 27 | Rotor shaft group |
| 11 | Mobile anchor | 28 | Control side bearing |
| 12 | Brake disk | 29 | Drive end key |
| 13 | Conveyor with friction track | 30 | B5 flange |
| 14 | Rectifier | 31 | B3 shield B3 |
| 15 | Seeger  or gear locking ring | 32 | B14 flange |
| 16 | Brake Gear | | |
| 17 | Fan | | |

# F BRAKE

F brakes are Three phase or DC supplied through a rectifier. Windings are encapsulated with resins in F class. Braking torque is adjustable for all types.

Brake discs are made in high resistance polymer applied on aluminum support; such solutions avoids deformation and incoming losses between the shaft and the disc also after long operation periods.

It guarantees an efficient anti sticking system and a reliable protection against humidity avoiding oxidation. Friction materials are made with medium hardness mixtures due to guarantee low consumption and constant braking coefficient. The construction is modular and maintenance operations are simple.

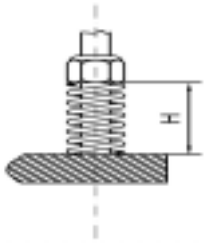
FK brakes are available in standard or special voltages.

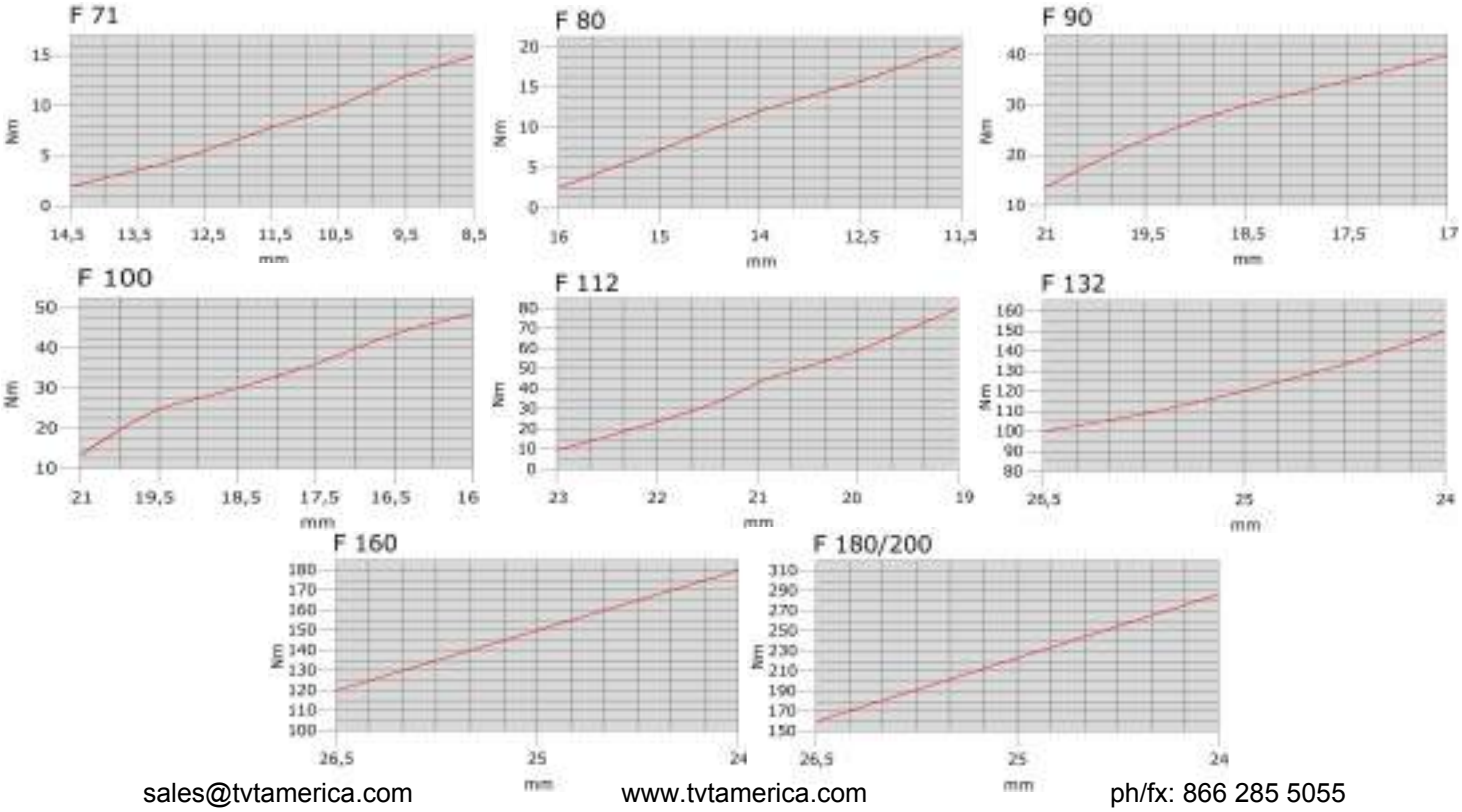
# BRAKING TORQUE

F type motors are supplied with braking torque adjusted at 50/ 70% of maximum.

Braking torque is proportional to the compression of springs as shown in fig.1 and can be modified working on compression nuts. Compression of the springs (3 or 6) must be uniform. See the indicative following description to adjust the braking torque values.

Different or lower values than indicated are available on request.
Special discs with braking coefficient are also available for special applications.
*Please contact TVT for further information.*



# BRAKE MAINTENANCE

## *Magnetic gap adjustment*

The magnetic gap 40 (the distance between the electromagnet and of the mobile anchor) must be adjusted at approximately mm. 0,3.

The magnetic gap should be periodically checked.

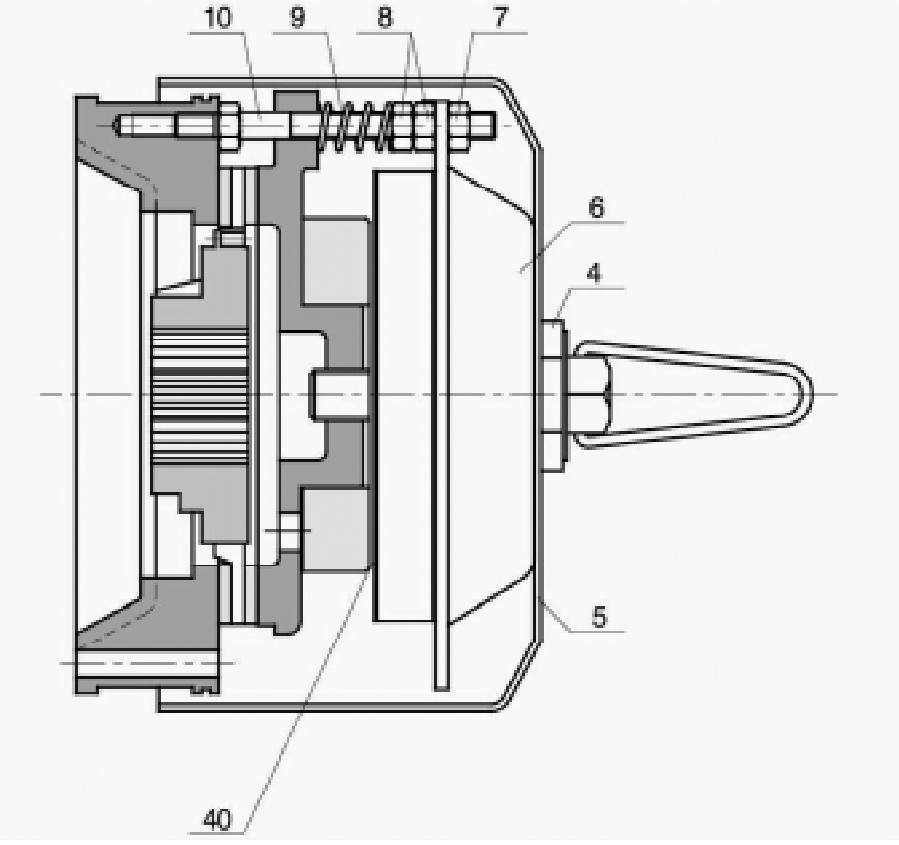
In order to adjust the magnetic gap , turn the couples of nuts (7-8) moving the electromagnet to the mobile anchor. When the magnetic gap has been adjusted check that nuts have been correctly locked.

## *Replacing the electromagnet*

Remove screw 4, remove cap 5, disconnect the 6 terminals of the magnet, remove the three nuts 7 and slip electromagnet 6 off stud bolts 10.
Slip the new electromagnet on to the stud bolts, making sure that, when reinserting the terminals the colours position is same of previous one.
Now adjust the magnetic gap.

## *Replacing the brake disc*

Loosen screw 4, remove cap 6 and loosen the three nuts 7 without detaching the terminals. Remove nuts 8 and spring 9. Mount the new brake disc and assemble the other parts.
Now adjust the magnetic gap



# 2 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F71A2 | 0,37 | 2765 | 0,79 | 1,10 | 2,5 | 3,9 | 0,00071 | 15 | 6000 | 110 | 9,5 |
| F71B2 | 0,55 | 2780 | 0,79 | 1,50 | 2,5 | 3,9 | 0,00082 | 15 | 5000 | 110 | 10,5 |
| F71C2* | 0,75 | 2780 | 0,76 | 2,10 | 2,3 | 4,3 | 0,00098 | 15 | 4000 | 110 | 11,5 |
| F80A2 | 0,75 | 2780 | 0,77 | 2,00 | 3,0 | 4,8 | 0,00146 | 20 | 6000 | 180 | 14,4 |
| F80B2 | 1,10 | 2780 | 0,82 | 2,90 | 3,0 | 4,9 | 0,00129 | 20 | 5300 | 180 | 155 |
| F90SA2 | 1,50 | 2780 | 0,86 | 3,50 | 2,5 | 6,8 | 0,00189 | 40 | 4000 | 250 | 20 |
| F90SB2 | 1,84 | 2780 | 0,86 | 4,30 | 2,5 | 6,8 | 0,00200 | 40 | 3500 | 250 | 21,5 |
| F90LA2 | 2,20 | 2800 | 0,88 | 4,70 | 2,5 | 6,8 | 0,00232 | 40 | 3000 | 250 | 23 |
| F100LA2 | 3,00 | 2800 | 0,88 | 6,50 | 2,9 | 8,0 | 0,00572 | 48 | 1200 | 250 | 28 |
| F112MB2 | 4,00 | 2820 | 0,87 | 8,20 | 2,4 | 7,4 | 0,00720 | 80 | 900 | 500 | 47 |
| F132SA2 | 5,50 | 2880 | 0,85 | 11,0 | 2,3 | 7,5 | 0,03100 | 150 | 500 | 800 | 78,5 |
| F132SB2 | 7,50 | 2880 | 0,85 | 15,0 | 2,3 | 7,5 | 0,03320 | 150 | 500 | 800 | 84,5 |
| F132MA2* | 9,20 | 2870 | 0,88 | 18,0 | 2,3 | 7,5 | 0,03980 | 150 | 500 | 800 | 94,5 |
| F132MB2* | 11,00 | 2870 | 0,89 | 21,0 | 2,3 | 7,5 | 0,04620 | 150 | 500 | 800 | 100 |
| F160MA2 | 11,00 | 2890 | 0,88 | 20,80 | 3,0 | 9,0 | 0,06020 | 175 | 300 | 800 | 120 |
| F160MB2 | 15,00 | 2900 | 0,87 | 29,0 | 3,0 | 8,0 | 0,06260 | 175 | 300 | 800 | 130 |
| F160LA2 | 18,50 | 2900 | 0,9 | 33,0 | 3,0 | 8,0 | 0,08960 | 175 | 290 | 800 | 150 |
| F180LA2 | 22,00 | 2940 | 0,9 | 39,0 | 2,0 | 7,5 | 0,16800 | 300 | 190 | 800 | 210 |
| F200LA2 | 30,00 | 2950 | 0,9 | 53,0 | 2,0 | 7,5 | 0,20000 | 300 | 190 | 800 | 230 |
| F200LB2 | 37,00 | 2950 | 0,89 | 65,50 | 2,0 | 7,5 | 0,21000 | 300 | 190 | 800 | 250 |

*non unified powers

**1)** Motors from frame 71 to 132 are supplied with voltage at 220/ 380/50 240/415/50 255/440/60 277/480/60

**2)** Motors frame 160, 180, 200, are supplied as series with motor at V.400/690/50 and electromagnet at V.230/400/50

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 4 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F71A4 | 0,25 | 1400 | 0,65 | 0,9 | 2,70 | 3,9 | 0,00071 | 15 | 19500 | 110 | 9,5 |
| F71B4 | 0,37 | 1390 | 0,70 | 1,2 | 2,70 | 4,1 | 0,00082 | 15 | 18000 | 110 | 10,5 |
| F71C4* | 0,55 | 1360 | 0,72 | 1,7 | 2,30 | 3,1 | 0,00098 | 15 | 15000 | 110 | 11,5 |
| F80A4 | 0,55 | 1390 | 0,68 | 1,7 | 2,30 | 4,0 | 0,00146 | 20 | 10000 | 180 | 14 |
| F80B4 | 0,75 | 1400 | 0,70 | 2,2 | 2,60 | 4,2 | 0,00173 | 20 | 10000 | 180 | 15,5 |
| F80C4* | 0,90 | 1390 | 0,69 | 2,7 | 2,50 | 4,3 | 0,00185 | 20 | 9000 | 180 | 16,5 |
| F90SA4 | 1,10 | 1400 | 0,77 | 2,7 | 2,30 | 4,6 | 0,00284 | 40 | 10000 | 250 | 21 |
| F90LA4 | 1,50 | 1400 | 0,75 | 3,7 | 3,00 | 4,9 | 0,00305 | 40 | 10000 | 250 | 23 |
| F90LB4* | 1,85 | 1400 | 0,77 | 4,3 | 3,00 | 4,6 | 0,00388 | 40 | 9000 | 250 | 24 |
| F90LC4* | 2,20 | 1400 | 0,78 | 5,4 | 2,90 | 4,3 | 0,00430 | 40 | 8000 | 250 | 26 |
| F100LA4 | 2,20 | 1410 | 0,78 | 5,0 | 2,70 | 5,5 | 0,00572 | 48 | 7500 | 250 | 28 |
| F100LB4 | 3,00 | 1410 | 0,82 | 6,4 | 2,70 | 5,0 | 0,00612 | 48 | 7000 | 250 | 32 |
| F100LC4* | 3,30 | 1410 | 0,80 | 7,5 | 2,60 | 4,7 | 0,00750 | 48 | 7000 | 250 | 34 |
| F112MB4 | 4,00 | 1430 | 0,85 | 8,2 | 2,70 | 5,8 | 0,01180 | 80 | 3300 | 500 | 47 |
| F112MC4* | 5,50 | 1430 | 0,83 | 11,5 | 2,70 | 6,0 | 0,01450 | 80 | 3300 | 500 | 50 |
| F132SB4 | 5,50 | 1440 | 0,81 | 11,3 | 2,60 | 5,8 | 0,03320 | 150 | 1200 | 800 | 84,5 |
| F132MA4 | 7,50 | 1430 | 0,85 | 14,6 | 2,30 | 5,8 | 0,03900 | 150 | 1000 | 800 | 94,5 |
| F132MB4* | 9,00 | 1430 | 0,84 | 17,9 | 2,30 | 5,8 | 0,04620 | 150 | 900 | 800 | 100 |
| F160MB4 | 11,00 | 1460 | 0,80 | 22,0 | 2,80 | 5,9 | 0,06260 | 175 | 600 | 800 | 130 |
| F160LA4 | 15,00 | 1460 | 0,82 | 29,0 | 2,30 | 5,9 | 0,08960 | 175 | 600 | 800 | 150 |
| F160LB4* | 18,50 | 1450 | 0,83 | 37,0 | 2,20 | 5,8 | 0,09480 | 175 | 600 | 800 | 170 |
| F180LA4 | 18,50 | 1470 | 0,85 | 34,5 | 2,20 | 7,5 | 0,1670 | 300 | 540 | 800 | 210 |
| F180LB4 | 22,0 | 1470 | 0,86 | 39,8 | 2,20 | 7,5 | 0,1990 | 300 | 530 | 800 | 230 |
| F200LB4 | 30,0 | 1470 | 0,86 | 53,1 | 2,20 | 7,2 | 0,1213 | 300 | 300 | 800 | 250 |

*non unified powers

**1)** Motors from frame 71 to 132 are supplied with voltage at 220/ 380/50 240/415/50 255/440/60 277/480/60

**2)** Motors frame 160, 180, 200, are supplied as series with motor at V.400/690/50 and electromagnet at V.230/400/50

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 6 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F71A6 | 0,18 | 900 | 0,69 | 0,8 | 1,9 | 2,5 | 0,00091 | 15 | 22000 | 110 | 9,5 |
| F71B6 | 0,25 | 910 | 0,69 | 1,0 | 2,0 | 2,5 | 0,00123 | 15 | 22000 | 110 | 10,5 |
| F71C6* | 0,30 | 900 | 0,68 | 1,2 | 1,9 | 2,6 | 0,00141 | 15 | 19000 | 110 | 11,5 |
| F80A6 | 0,37 | 900 | 0,66 | 1,3 | 2,6 | 3,5 | 0,00223 | 20 | 18000 | 180 | 14,5 |
| F80B6 | 0,55 | 900 | 0,68 | 1,8 | 2,6 | 3,5 | 0,00280 | 20 | 18000 | 180 | 16 |
| F90SA6 | 0,75 | 910 | 0,68 | 2,3 | 2,2 | 3,3 | 0,00356 | 40 | 18000 | 250 | 21 |
| F90LA6 | 1,10 | 910 | 0,68 | 3,3 | 2,3 | 3,7 | 0,00472 | 40 | 14000 | 250 | 23 |
| F100LA6 | 1,50 | 930 | 0,71 | 3,9 | 2,4 | 4,3 | 0,00874 | 48 | 9000 | 250 | 28 |
| F100LB6* | 1,85 | 920 | 0,68 | 5,0 | 2,6 | 4,3 | 0,00996 | 48 | 8500 | 250 | 32 |
| F112MB6 | 2,20 | 940 | 0,78 | 5,2 | 2,3 | 5,3 | 0,01680 | 80 | 4500 | 500 | 47 |
| F132SB6 | 3,00 | 960 | 0,76 | 7,0 | 2,1 | 5,6 | 0,03100 | 150 | 3000 | 800 | 84,5 |
| F132MA6 | 4,00 | 960 | 0,76 | 9,1 | 2,7 | 5,6 | 0,04250 | 150 | 3000 | 800 | 94,5 |
| F132MB6 | 5,50 | 960 | 0,78 | 12 | 2,1 | 5,5 | 0,05150 | 150 | 2800 | 800 | 100 |
| F160MB6 | 7,50 | 950 | 0,79 | 18 | 2,1 | 5,6 | 0,09700 | 175 | 900 | 800 | 130 |
| F160LA6* | 9,50 | 950 | 0,80 | 22 | 2,0 | 5,5 | 0,1230 | 175 | 900 | 800 | 150 |
| F160LB6 | 11,00 | 960 | 0,80 | 26 | 2,0 | 5,5 | 0,1433 | 175 | 900 | 800 | 175 |
| F180LB6 | 15,00 | 970 | 0,81 | 30 | 2,1 | 7,0 | 0,2180 | 300 | 580 | 800 | 210 |
| F200LA6 | 18,50 | 970 | 0,81 | 37 | 2,1 | 7,0 | 0,2200 | 300 | 330 | 800 | 230 |
| F200LB6 | 22,00 | 970 | 0,83 | 43 | 2,1 | 7,0 | 0,2550 | 300 | 330 | 800 | 250 |

*non unified powers

**1)** Motors from frame 71 to 132 are supplied with voltage at 220/ 380/50 240/415/50 255/440/60 277/480/60

**2)** Motors frame 160, 180, 200, are supplied as series with motor at V.400/690/50 and electromagnet at V.230/400/50

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 8 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F71B8 | 0,12 | 660 | 0,55 | 0,9 | 2,0 | 2,7 | 0,00123 | 15 | 22000 | 110 | 11 |
| F80A8 | 0,18 | 670 | 0,59 | 1,0 | 1,8 | 3,2 | 0,00223 | 20 | 20000 | 180 | 15 |
| F80B8 | 0,25 | 670 | 0,64 | 1,3 | 1,7 | 3,0 | 0,00280 | 20 | 19000 | 180 | 15,5 |
| F90SA8 | 0,37 | 690 | 0,56 | 1,6 | 2,2 | 2,8 | 0,00356 | 40 | 20000 | 250 | 20 |
| F90LA8 | 0,55 | 690 | 0,57 | 2,3 | 2,2 | 2,9 | 0,00472 | 40 | 18000 | 250 | 22 |
| F100LA8 | 0,75 | 700 | 0,59 | 2,8 | 2,3 | 3,2 | 0,00874 | 48 | 12000 | 250 | 28 |
| F100LB8 | 1,10 | 700 | 0,60 | 3,6 | 2,1 | 3,5 | 0,00996 | 48 | 10000 | 250 | 32 |
| F112MB8 | 1,50 | 710 | 0,65 | 4,5 | 1,9 | 4,0 | 0,01680 | 80 | 5000 | 500 | 46 |
| F132SB8 | 2,20 | 715 | 0,72 | 5,3 | 1,7 | 4,8 | 0,03100 | 150 | 3200 | 800 | 85 |
| F132MA8 | 3,00 | 720 | 0,69 | 8,5 | 1,8 | 4,8 | 0,04250 | 150 | 3000 | 800 | 93,5 |
| F160MA8 | 4,00 | 710 | 0,71 | 11 | 2,0 | 5,0 | 0,09500 | 175 | 1200 | 800 | 120 |
| F160MB8 | 5,50 | 710 | 0,73 | 13 | 2,0 | 5,0 | 0,12300 | 175 | 1100 | 800 | 130 |
| F160LA8 | 7,50 | 710 | 0,71 | 18 | 2,2 | 5,0 | 0,11800 | 175 | 1000 | 800 | 150 |
| F180LB8 | 11,0 | 730 | 0,75 | 24 | 2,0 | 6,0 | 0,22000 | 300 | 750 | 800 | 210 |
| F200LA8 | 15,0 | 730 | 0,76 | 33 | 1,8 | 6,3 | 0,25200 | 300 | 450 | 800 | 250 |

*non unified powers

**1)** Motors from frame 71 to 132 are supplied with voltage at 220/ 380/50 240/415/50 255/440/60 277/480/60

**2)** Motors frame 160, 180, 200, are supplied as series with motor at V.400/690/50 and electromagnet at V.230/400/50

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 2/4 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FD71A2/4 | 0,26 | 2800 | 0,73 | 0,8 | 2,5 | 4,6 | 0,00071 | 15 | 7000 | 110 | 10,3 |
| | 0,18 | 1380 | 0,68 | 0,7 | 2,4 | 3,9 | | | 12000 | | |
| FD71B2/4 | 0,37 | 2800 | 0,85 | 0,90 | 2,4 | 4,7 | 0,00082 | 15 | 6000 | 110 | 11 |
| | 0,26 | 1390 | 0,78 | 0,90 | 2,3 | 3,0 | | | 10000 | | |
| FD71C2/4 | 0,45 | 2800 | 0,76 | 1,4 | 2,6 | 4,7 | 0,00098 | 15 | 5500 | 110 | 11,5 |
| | 0,30 | 1390 | 0,70 | 1,1 | 2,3 | 3,9 | | | 9000 | | |
| FD80A2/4 | 0,65 | 2800 | 0,77 | 1,8 | 2,3 | 5,0 | 0,00146 | 20 | 3000 | 180 | 15 |
| | 0,45 | 1400 | 0,72 | 1,4 | 2,2 | 4,8 | | | 10000 | | |
| FD80B2/4 | 0,9 | 2800 | 0,78 | 2,3 | 2,4 | 5,1 | 0,00173 | 20 | 2500 | 180 | 15,5 |
| | 0,6 | 1415 | 0,73 | 1,8 | 2,3 | 5,0 | | | 8000 | | |
| FD90SB2/4 | 1,3 | 2800 | 0,85 | 3,3 | 2,3 | 4,7 | 0,00295 | 40 | 2000 | 250 | 20 |
| | 0,9 | 1420 | 0,73 | 2,4 | 2,3 | 4,5 | | | 7500 | | |
| FD90LA2/4 | 1,8 | 2800 | 0,81 | 4,5 | 2,7 | 4,9 | 0,00305 | 40 | 2000 | 250 | 22 |
| | 1,2 | 1420 | 0,71 | 3,2 | 2,9 | 4,8 | | | 7000 | | |
| FD90LB2/4 | 2,2 | 2800 | 0,80 | 5,5 | 2,7 | 4,9 | 0,00388 | 40 | 1800 | 250 | 24 |
| | 1,5 | 1400 | 0,74 | 3,9 | 3,0 | 4,6 | | | 7000 | | |
| FD100LA2/4 | 2,5 | 2860 | 0,85 | 5,2 | 2,6 | 6,2 | 0,00572 | 48 | 1000 | 250 | 28 |
| | 1,9 | 1420 | 0,82 | 3,9 | 2,4 | 5,4 | | | 5500 | | |
| FD100LB2/4 | 3,3 | 2870 | 0,85 | 7,0 | 2,8 | 7,0 | 0,00612 | 48 | 1000 | 250 | 32 |
| | 2,4 | 1420 | 0,77 | 5,3 | 2,5 | 6,3 | | | 5000 | | |
| FD112MB2/4 | 4,5 | 2880 | 0,87 | 9,3 | 2,4 | 7,0 | 0,00118 | 80 | 500 | 500 | 48 |
| | 3,3 | 1410 | 0,86 | 6,9 | 2,3 | 6,3 | | | 2000 | | |
| FD132SB2/4 | 5,1 | 2810 | 0,91 | 11 | 2,7 | 5,1 | 0,03320 | 150 | 450 | 800 | 84,5 |
| | 4,5 | 1400 | 0,81 | 10 | 2,5 | 5,8 | | | 1500 | | |
| FD132MA2/4 | 6,0 | 2810 | 0,93 | 12,5 | 3,0 | 5,2 | 0,03900 | 150 | 400 | 800 | 94,5 |
| | 5,0 | 1400 | 0,80 | 12,0 | 2,8 | 5,8 | | | 1000 | | |
| FD160MA2/4 | 9,50 | 2800 | 0,86 | 17 | 2,8 | 8,5 | 0,06000 | 175 | 200 | 800 | 120 |
| | 8,0 | 1410 | 0,85 | 15 | 2,3 | 5,8 | | | 400 | | |
| FD160MB2/4 | 11 | 2830 | 0,86 | 24 | 2,4 | 8,5 | 0,06260 | 175 | 200 | 800 | 130 |
| | 9,0 | 1410 | 0,86 | 20 | 2,3 | 5,6 | | | 350 | | |
| FD160LA2/4 | 13 | 2830 | 0,86 | 27 | 2,5 | 8,8 | 0,08960 | 175 | 150 | 800 | 150 |
| | 11 | 1450 | 0,84 | 22 | 2,2 | 5,5 | | | 300 | | |
| FD180LA2/4 | 17 | 2830 | 0,90 | 36 | 2,2 | 6,0 | 0,16700 | 300 | 100 | 800 | 210 |
| | 14 | 1420 | 0,87 | 29 | 2,0 | 6,0 | | | 300 | | |
| FD180LB2/4 | 20 | 2830 | 0,90 | 41 | 2,2 | 6,5 | 0,19900 | 300 | 100 | 800 | 230 |
| | 17 | 1420 | 0,87 | 34 | 2,0 | 6,0 | | | 300 | | |
| FD200LB2/4 | 28 | 2900 | 0,90 | 58 | 2,2 | 6,5 | 0,12130 | 300 | 70 | 800 | 250 |
| | 24 | 1450 | 0,87 | 50 | 2,0 | 3,0 | | | 200 | | |

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 2/6 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FDA71B2/6 | 0,25 | 2850 | 0,75 | 0,95 | 2,4 | 4,5 | 0,00082 | 15 | 3800 | 110 | 10,5 |
| | 0,08 | 930 | 0,65 | 0,75 | 2 | 2,4 | | | 12000 | | |
| FDA71C2/6 | 0,35 | 2860 | 0,73 | 1,1 | 2,3 | 5,0 | 0,00098 | 15 | 3600 | 110 | 11,2 |
| | 0,10 | 950 | 0,66 | 1,0 | 2,1 | 3,4 | | | 11000 | | |
| FDA80A2/6 | 0,37 | 2860 | 0,66 | 1,4 | 2,5 | 4,9 | 0,00146 | 20 | 2000 | 180 | 14 |
| | 0,12 | 930 | 0,58 | 0,9 | 2,1 | 3,3 | | | 10000 | | |
| FDA80B2/6 | 0,55 | 2860 | 0,67 | 1,9 | 2,3 | 5,2 | 0,00173 | 20 | 2000 | 180 | 15,5 |
| | 0,18 | 940 | 0,56 | 1,2 | 2,1 | 3,3 | | | 10000 | | |
| FDA90SA2/6 | 0,90 | 2870 | 0,84 | 2,1 | 2,6 | 6,5 | 0,00284 | 40 | 1900 | 250 | 20 |
| | 0,30 | 940 | 0,64 | 1,2 | 2,2 | 2,5 | | | 9000 | | |
| FDA90LA2/6 | 1,20 | 2870 | 0,81 | 2,9 | 2,3 | 6,3 | 0,00305 | 40 | 1800 | 250 | 22 |
| | 0,40 | 950 | 0,66 | 1,7 | 2,0 | 3,5 | | | 8000 | | |
| FDA100LB2/6 | 2,20 | 2800 | 0,85 | 4,9 | 2,7 | 6,7 | 0,00612 | 48 | 900 | 250 | 32 |
| | 0,80 | 910 | 0,64 | 2,6 | 2,2 | 3,5 | | | 6000 | | |
| FDA112MB2/6 | 3,00 | 2880 | 0,85 | 6,60 | 2,9 | 7,1 | 0,01180 | 80 | 500 | 500 | 48 |
| | 1,00 | 930 | 0,62 | 3,50 | 2,3 | 4,0 | | | 4000 | | |
| FDA132SB2/6 | 4,00 | 2860 | 0,84 | 9,5 | 2,6 | 8,6 | 0,03120 | 150 | 350 | 800 | 85 |
| | 1,50 | 920 | 0,58 | 4,3 | 2,1 | 5,1 | | | 1600 | | |
| FDA132MB2/6 | 6,45 | 2860 | 0,82 | 15,0 | 2,7 | 8,3 | 0,04620 | 150 | 350 | 800 | 102 |
| | 2,20 | 910 | 0,60 | 7,5 | 2,1 | 5,5 | | | 1600 | | |
| FDA160LA2/6 | 11,00 | 2860 | 0,84 | 20,0 | 2,7 | 7,1 | 0,08960 | 175 | 250 | 800 | 150 |
| | 3,40 | 960 | 0,58 | 12,0 | 2,2 | 4,2 | | | 900 | | |
| FDA180LB2/6 | 16,00 | 2800 | 0,79 | 39 | 2,3 | 7,0 | 0,19900 | 300 | 90 | 800 | 253 |
| | 6,50 | 950 | 0,67 | 22 | 3,0 | 5,3 | | | 230 | | |

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 2/8 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FDA71B2/8 | 0,25 | 2800 | 0,71 | 0,95 | 2,4 | 4,5 | 0,00082 | 15 | 3600 | 110 | 10,5 |
| | 0,06 | 690 | 0,6 | 0,60 | 1,9 | 2,3 | | | 15000 | | |
| FDA71C2/8 | 0,35 | 2800 | 0,71 | 1,3 | 2,3 | 5,0 | 0,00098 | 15 | 3600 | 110 | 11,5 |
| | 0,07 | 690 | 0,6 | 0,7 | 1,9 | 2,2 | | | 15000 | | |
| FDA80A2/8 | 0,37 | 2800 | 0,66 | 1,4 | 2,5 | 4,4 | 0,00146 | 20 | 2000 | 180 | 14 |
| | 0,09 | 690 | 0,53 | 0,75 | 1,9 | 2,3 | | | 12000 | | |
| FDA80B2/8 | 0,55 | 2800 | 0,69 | 1,9 | 2,3 | 5,2 | 0,00173 | 20 | 2000 | 180 | 15,5 |
| | 0,12 | 690 | 0,53 | 0,9 | 2 | 5,4 | | | 12000 | | |
| FDA90SB2/8 | 0,75 | 2820 | 0,70 | 2,1 | 2,6 | 5,5 | 0,00295 | 40 | 1900 | 250 | 20 |
| | 0,18 | 700 | 0,54 | 1,1 | 1,9 | 2,3 | | | 10000 | | |
| FDA90LA2/8 | 1,10 | 2820 | 0,75 | 2,7 | 2,5 | 5,6 | 0,00305 | 40 | 1800 | 250 | 22 |
| | 0,25 | 700 | 0,55 | 1,5 | 1,9 | 2,4 | | | 10000 | | |
| FDA90LB2/8 | 1,30 | 2820 | 0,78 | 3,1 | 2,4 | 5,8 | 0,00388 | 40 | 1800 | 250 | 24 |
| | 0,30 | 700 | 0,58 | 1,8 | 2 | 2,3 | | | 9000 | | |
| FDA100LA2/8 | 1,50 | 2820 | 0,78 | 3,9 | 2,6 | 5,6 | 0,00572 | 48 | 1000 | 250 | 28 |
| | 0,37 | 700 | 0,56 | 2,2 | 1,8 | 2,8 | | | 7000 | | |
| FDA100LB2/8 | 2,20 | 2840 | 0,87 | 4,9 | 2,5 | 5,1 | 0,00612 | 48 | 900 | 250 | 32 |
| | 0,50 | 700 | 0,58 | 2,8 | 1,8 | 2,9 | | | 3000 | | |
| FDA112MA2/8 | 2,50 | 2840 | 0,74 | 5,8 | 2,4 | 5,5 | 0,00950 | 80 | 500 | 500 | 45 |
| | 0,60 | 705 | 0,57 | 3,2 | 1,9 | 3,0 | | | 2500 | | |
| FDA112MB2/8 | 3,00 | 2850 | 0,74 | 6,7 | 2,5 | 6,0 | 0,01180 | 80 | 500 | 500 | 47 |
| | 0,80 | 705 | 0,59 | 3,6 | 2 | 3,0 | | | 2500 | | |
| FDA132SB2/8 | 4,00 | 2860 | 0,74 | 10,0 | 2,6 | 6,5 | 0,03120 | 150 | 300 | 800 | 84,5 |
| | 1,10 | 700 | 0,60 | 4,0 | 1,9 | 2,9 | | | 1500 | | |
| FDA132MA2/8 | 5,50 | 2870 | 0,75 | 12,0 | 2,5 | 6,6 | 0,04000 | 150 | 300 | 800 | 94,5 |
| | 1,50 | 700 | 0,61 | 5,6 | 2,1 | 3,0 | | | 1300 | | |
| FDA132MB2/8 | 6,20 | 2860 | 0,82 | 13,7 | 2,5 | 6,6 | 0,04620 | 150 | 300 | 800 | 100 |
| | 1,80 | 690 | 0,67 | 6,8 | 2,1 | 3,0 | | | 1300 | | |
| FDA160LA2/8 | 11,00 | 2900 | 0,90 | 24,0 | 2,4 | 6,8 | 0,08960 | 175 | 300 | 800 | 150 |
| | 3,00 | 720 | 0,63 | 14,0 | 2,2 | 3,4 | | | 1300 | | |

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 4/6 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FDA71A4/6 | 0,13 | 1360 | 0,70 | 0,7 | 2,3 | 4,5 | 0,00091 | 15 | 7000 | 110 | 10,5 |
| | 0,08 | 890 | 0,64 | 0,4 | 2,0 | 3 | | | 10000 | | |
| FDA71B4/6 | 0,18 | 1370 | 0,72 | 0,7 | 2,3 | 2,3 | 0,00123 | 15 | 7000 | 110 | 11,5 |
| | 0,11 | 900 | 0,67 | 0,5 | 2,2 | 2,9 | | | 10000 | | |
| FDA80A4/6 | 0,26 | 1390 | 0,75 | 1,0 | 2,4 | 4,8 | 0,00223 | 20 | 7000 | 180 | 14 |
| | 0,18 | 930 | 0,68 | 0,9 | 2,0 | 3 | | | 10000 | | |
| FDA80B4/6 | 0,37 | 1400 | 0,76 | 1,1 | 2,5 | 4,8 | 0,00280 | 20 | 6000 | 180 | 15,5 |
| | 0,26 | 930 | 0,69 | 1,0 | 2,0 | 3 | | | 8000 | | |
| FDA90SA4/6 | 0,55 | 1410 | 0,77 | 1,8 | 2,4 | 5,5 | 0,00356 | 40 | 6000 | 250 | 20 |
| | 0,37 | 945 | 0,7 | 1,6 | 2,1 | 3,6 | | | 8000 | | |
| FDA90LA4/6 | 0,75 | 1410 | 0,79 | 2,4 | 2,3 | 5,6 | 0,00472 | 40 | 9500 | 250 | 22 |
| | 0,55 | 945 | 0,60 | 2 | 2,2 | 3,3 | | | 8000 | | |
| FDA100LB4/6 | 1,50 | 1420 | 0,79 | 3,9 | 2,6 | 5,6 | 0,00996 | 48 | 4000 | 250 | 32 |
| | 1,10 | 945 | 0,70 | 3,2 | 2,3 | 3,5 | | | 6000 | | |
| FDA112MB4/6 | 2,00 | 1430 | 0,86 | 4,5 | 2,4 | 5,3 | 0,01680 | 80 | 2000 | 500 | 48,0 |
| | 1,30 | 950 | 0,71 | 3,6 | 2,0 | 4,5 | | | 3000 | | |
| FDA132SB4/6 | 2,20 | 1430 | 0,84 | 5,0 | 2,3 | 6 | 0,03100 | 150 | 600 | 800 | 84,5 |
| | 1,50 | 930 | 0,71 | 3,7 | 1,9 | 3,4 | | | 1000 | | |
| FDA132MA4/6 | 3,00 | 1430 | 0,84 | 6,0 | 2,4 | 6,0 | 0,04250 | 150 | 800 | 800 | 94,5 |
| | 2,20 | 930 | 0,72 | 5,2 | 2,2 | 3,6 | | | 1200 | | |
| FDA132MB4/6 | 3,70 | 1440 | 0,84 | 8,3 | 2,3 | 6,1 | 0,04950 | 150 | 700 | 800 | 100 |
| | 2,60 | 930 | 0,72 | 6,2 | 2,2 | 3,8 | | | 1000 | | |
| FDA160MB4/6 | 5,50 | 1450 | 0,85 | 12 | 2,2 | 7 | 0,10700 | 175 | 500 | 800 | 130 |
| | 3,70 | 930 | 0,75 | 8,5 | 2,0 | 4 | | | 700 | | |
| FDA160LB4/6 | 7,50 | 1450 | 0,84 | 17,5 | 2,3 | 7 | 0,14350 | 175 | 400 | 800 | 170 |
| | 5,50 | 930 | 0,76 | 13,5 | 2,0 | 4 | | | 700 | | |
| FDA180LA4/6 | 11,0 | 1450 | 0,88 | 22 | 2,1 | 7 | 0,1860 | 300 | 250 | 800 | 200 |
| | 7,5 | 930 | 0,70 | 18,5 | 2,0 | 5 | | | 400 | | |
| FDA180LB4/6 | 13 | 1450 | 0,88 | 27 | 2,2 | 7 | 0,2180 | 300 | 230 | 800 | 210 |
| | 8,8 | 930 | 0,70 | 22 | 2,0 | 5 | | | 380 | | |
| FDA200LB4/6 | 18,5 | 1460 | 0,84 | 35 | 2,0 | 7 | 0,2550 | 300 | 120 | 800 | 250 |
| | 12,5 | 970 | 0,76 | 25 | 2,0 | 6 | | | 180 | | |

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# 4/8 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FD71A4/8 | 0,13 | 1360 | 0,83 | 0,5 | 2,0 | 3,7 | 0,00091 | 15 | 12000 | 110 | 10 |
| | 0,07 | 680 | 0,62 | 0,5 | 2,2 | 3 | | | 20000 | | |
| FD71B4/8 | 0,18 | 1360 | 0,82 | 0,7 | 2,2 | 3,8 | 0,00123 | 15 | 10000 | 110 | 10,5 |
| | 0,09 | 680 | 0,63 | 0,7 | 1,9 | 2,6 | | | 20000 | | |
| FD71C4/8 | 0,22 | 1360 | 0,80 | 0,8 | 2,1 | 3,9 | 0,00141 | 15 | 9000 | 110 | 12 |
| | 0,12 | 670 | 0,6 | 0,8 | 1,9 | 2,7 | | | 20000 | | |
| FD80A4/8 | 0,26 | 1410 | 0,83 | 0,9 | 2,2 | 5,5 | 0,00223 | 20 | 7000 | 180 | 14,5 |
| | 0,18 | 6750 | 0,60 | 0,9 | 1,9 | 3,0 | | | 14000 | | |
| FD80B4/8 | 0,37 | 1405 | 0,84 | 0,9 | 2,3 | 5,5 | 0,00280 | 20 | 7000 | 180 | 15,5 |
| | 0,26 | 675 | 0,64 | 1,2 | 2,0 | 3 | | | 14000 | | |
| FD90SA4/8 | 0,75 | 1400 | 0,85 | 2,1 | 1,9 | 4,0 | 0,00356 | 40 | 6500 | 250 | 20 |
| | 0,37 | 700 | 0,6 | 1,9 | 2,2 | 3,0 | | | 12000 | | |
| FD90LB4/8 | 1,10 | 1400 | 0,85 | 2,7 | 2,0 | 4,0 | 0,00510 | 40 | 6000 | 250 | 24 |
| | 0,60 | 700 | 0,58 | 3 | 2,2 | 3,0 | | | 10000 | | |
| FD100LB4/8 | 1,60 | 1440 | 0,85 | 3,7 | 2,2 | 4,6 | 0,00996 | 48 | 4000 | 250 | 32 |
| | 0,90 | 700 | 0,61 | 3,5 | 2,2 | 3,2 | | | 8000 | | |
| FD112MB4/8 | 2,20 | 1440 | 0,89 | 4,6 | 2,2 | 5,6 | 0,01680 | 80 | 2000 | 500 | 48,0 |
| | 1,20 | 710 | 0,59 | 4,8 | 3,0 | 4,0 | | | 4000 | | |
| FD132SB4/8 | 3,00 | 1430 | 0,88 | 6,1 | 2,7 | 5,5 | 0,03100 | 150 | 700 | 800 | 84,5 |
| | 2,00 | 715 | 0,59 | 6,9 | 2,5 | 3,5 | | | 2000 | | |
| FD132MA4/8 | 4,00 | 1445 | 0,87 | 8,0 | 3,0 | 5,6 | 0,04250 | 150 | 500 | 800 | 98 |
| | 2,60 | 720 | 0,63 | 8,5 | 2,9 | 5,5 | | | 1500 | | |
| FD160MA4/8 | 5,50 | 1430 | 0,86 | 11,5 | 2,5 | 5,8 | 0,09500 | 175 | 600 | 800 | 120 |
| | 3,70 | 720 | 0,64 | 12,5 | 2,1 | 5,3 | | | 1200 | | |
| FD160MB4/8 | 6,60 | 1430 | 0,88 | 14,5 | 2,3 | 5,9 | 0,09700 | 175 | 600 | 800 | 130 |
| | 4,50 | 720 | 0,65 | 13,8 | 2,2 | 5,3 | | | 1200 | | |
| FD160LA4/8 | 9,60 | 1430 | 0,86 | 21 | 2,6 | 6,0 | 0,12300 | 175 | 550 | 800 | 150 |
| | 6,00 | 720 | 0,66 | 19 | 2,1 | 5,1 | | | 1100 | | |
| FD180LA4/8 | 11 | 1460 | 0,85 | 22 | 2,2 | 6,0 | 0,1860 | 300 | 400 | 800 | 190 |
| | 8 | 730 | 0,68 | 22 | 2,0 | 5,0 | | | 700 | | |
| FD180LB4/8 | 14 | 1450 | 0,87 | 28 | 2,2 | 6,0 | 0,2180 | 300 | 400 | 800 | 230 |
| | 10 | 720 | 0,72 | 25 | 2,0 | 4,5 | | | 680 | | |
| FD200LB4/8 | 21 | 1460 | 0,87 | 41 | 2,0 | 6,3 | 0,2550 | 300 | 80 | 800 | 250 |
| | 13 | 730 | 0,75 | 30 | 2,0 | 5,0 | | | 240 | | |

**3)** The braking torque values can be reduced of about 10% if the electromagnet is DC.

**4)** The performance data are also valid for SW and FKDF frame 90 to 200 duty S2 25min. except brake data and weight

# HOISTING MOTORS

## 4/12 Poles

| TYPE | KW S3 40%/20% | In V400 | TYPE | KW S3 40%/20% | In V400 |
|---|---|---|---|---|---|
| FDA71C4/12 | 0,20 | 1,20 | FDA132MC4/12 | 7,70 | 17,0 |
| | 0,08 | 0,80 | | 2,50 | 11,5 |
| FDA80C4/12 | 0,55 | 1,70 | FDA132MD4/12 | 8,00 | 18,0 |
| | 0,18 | 1,20 | | 2,60 | 12,0 |
| FDA90LB4/12 | 0,80 | 2,50 | FDA132LX4/12 | 11,80 | 26,2 |
| | 0,30 | 2,20 | | 3,90 | 19,8 |
| FDA100LB4/12 | 1,70 | 3,40 | FDA160LA4/12 | 11,0 | 23,5 |
| | 0,60 | 2,90 | | 3,60 | 18,0 |
| FDA112MB4/12 | 3,20 | 8,00 | FDA160LB4/12 | 14,0 | 30,0 |
| | 1,10 | 6,00 | | 4,80 | 24,0 |
| FDA112MC4/12 | 4,50 | 11,0 | FDA160LC4/12 | 16,5 | 33,0 |
| | 1,50 | 7,00 | | 5,15 | 29,0 |
| FDA132MB4/12 | 6,10 | 13,6 | FMDA225S4/12* | 19,0 | 38,0 |
| | 1,75 | 9,70 | | 6,30 | 29,0 |
| FDA132MB4/12 | 6,10 | 13,6 | FMDA225LX4/12* | 33,0 | 57,0 |
| | 1,75 | 9,70 | | 11,00 | 50,0 |

## 4/16 Poles

| TYPE | KW S3 40%/20% | In V400 | TYPE | KW S3 40%/20% | In V400 |
|---|---|---|---|---|---|
| FDA112MB4/16 | 1,60 | 4,60 | FDA132LX4/16 | 7,50 | 15,7 |
| | 0,40 | 3,80 | | 1,80 | 14,0 |
| FDA112MC4/16 | 2,00 | 1,70 | FDA160LA4/16 | 9,00 | 23,0 |
| | 0,50 | 1,20 | | 2,20 | 16,0 |
| FDA132SA4/16 | 2,80 | 6,50 | FDA160LB4/16 | 10,50 | 24 |
| | 0,70 | 4,80 | | 2,60 | 17 |
| FDA132MA4/16 | 4,00 | 8,80 | FDA160LC4/16 | 13,0 | 30,0 |
| | 1,00 | 7,20 | | 3,20 | 21,0 |
| FDA132MB4/16 | 4,80 | 11,00 | | | |
| | 1,20 | 9,00 | | | |

## 2/8 Poles

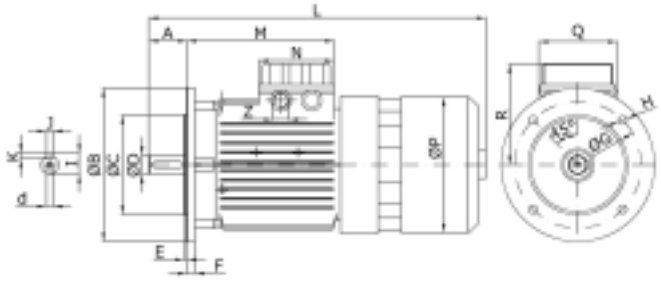
| TYPE | KW S3 40%/20% | In V400 | TYPE | KW S3 40%/20% | In V400 |
|---|---|---|---|---|---|
| FDA112MB2/8 | 4,00 | 9 | FDA132LX2/8 | 12,50 | 26 |
| | 1,00 | 4,5 | | 3,10 | 9,9 |
| FDA112MC2/8 | 4,80 | 11 | FDA160LB2/8 | 14,00 | 28 |
| | 1,20 | 5,4 | | 3,50 | 12,5 |
| FDA132MB2/8 | 7,50 | 16 | FDA160LC2/8 | 20,00 | 42 |
| | 1,90 | 7,5 | | 5,00 | 20 |
| FDA132MC2/8 | 9,00 | 18,5 | | | |
| | 2,20 | 9,5 | | | |

NOTES:
1) COEL hoisting motors are suitable for intermittent duty following the FEM 9-682 group 2m / M5 (different duty on request)
2) Higher powers and frames are available on request, please ask to TVT for further details
3) 4/24 and 2/12 poles motors for hoisting are also available please contact TVT for further details

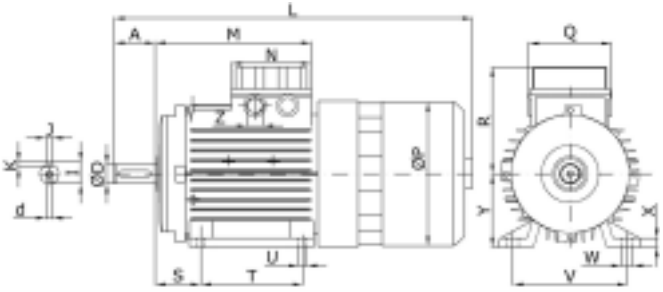
* DC brake only

# Overall dimensions

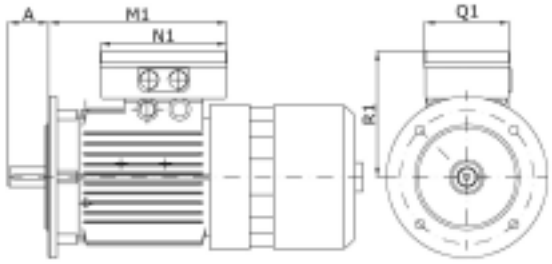
B5



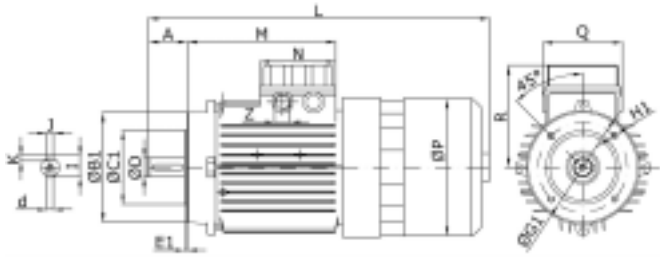
B3



Large terminal box B3, B5, B14



B14



| TIPO F | 71 | 80 | 90S | 90L | 100 | 112 | 132S | 132M | 160M | 160L | 180L | 200L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| A | 30 | 40 | 50 | 50 | 60 | 60 | 80 | 80 | 110 | 110 | 110 | 110 |
| ØB | 160 | 200 | 200 | 200 | 250 | 250 | 300 | 300 | 350 | 350 | 350 | 400 |
| ØB1 | 105 | 120 | 140 | 140 | 160 | 160 | 200 | 200 | | | | |
| ØC | 110 | 130 | 130 | 130 | 180 | 180 | 230 | 230 | 250 | 250 | 250 | 300 |
| ØC1 | 70 | 80 | 95 | 95 | 110 | 110 | 130 | 130 | | | | |
| ØD | 14 | 19 | 24 | 24 | 28 | 28 | 38 | 38 | 42 | 42 | 48 | 55 |
| d | M5 | M6 | M8 | M8 | M8 | M8 | M10 | M10 | M10 | M10 | M16 | M20 |
| E | 3,5 | 3,5 | 3,5 | 3,5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 |
| E1 | 2,5 | 3 | 3 | 3 | 3,5 | 3,5 | 3,5 | 3,5 | | | | |
| F | 9 | 11,5 | 10 | 10 | 14 | 14 | 17 | 17 | 16 | 16 | 13 | 16 |
| ØG | 130 | 165 | 165 | 165 | 215 | 215 | 265 | 265 | 300 | 300 | 300 | 350 |
| ØG1 | 85 | 100 | 115 | 115 | 130 | 130 | 165 | 165 | | | | |
| ØH | 9,5 | 11,5 | 11,5 | 11,5 | 14,5 | 14,5 | 14,5 | 14,5 | 18 | 18 | 19 | 19 |
| H1 | M6 | M8 | M8 | M8 | M8 | M8 | M10 | M10 | | | | |
| I | 16 | 21,5 | 27 | 27 | 31 | 31 | 41 | 41 | 45 | 45 | 51,5 | 59 |
| J | 5 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 12 | 12 | 14 | 16 |
| K | 5 | 6 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 9 | 10 |
| L | 339 | 374 | 420 | 444 | 490 | 536 | 611 | 650 | 760 | 801 | 909 | 984 |
| M | 147 | 161 | 167,5 | 191,5 | 216 | 229 | 278 | 317 | 371,5 | 413,5 | 269 | 269 |
| M1 | 170,5 | 182,5 | 197 | 221 | 245,5 | 258,5 | 277 | 316 | | | | |
| N | 80 | 80 | 98 | 98 | 98 | 98 | 130 | 130 | 180 | 180 | 175 | 175 |
| N1 | 127 | 127 | 157 | 157 | 157 | 157 | 200 | 200 | | | | |
| ØP | 140 | 155 | 177 | 177 | 177 | 220 | 256 | 256 | 314 | 314 | 314 | 314 |
| Q | 75 | 75 | 98 | 98 | 98 | 98 | 130 | 130 | 180 | 180 | 185 | 185 |
| Q1 | 82 | 82 | 105 | 105 | 105 | 105 | 130 | 130 | | | | |
| R | 104 | 112,5 | 131,5 | 131,5 | 139 | 155 | 197 | 197 | 248,5 | 248,5 | 271 | 305 |
| R1 | 136 | 144,5 | 156,5 | 156,5 | 164 | 180 | 197 | 197 | | | | |
| S | 45 | 50 | 56 | 56 | 63 | 72 | 89 | 89 | 100 | 100 | 100 | 133 |
| T | 90 | 100 | 100 | 125 | 140 | 140 | 140 | 178 | 210 | 254 | 279 | 305 |
| U | 7 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 15 | 19 |
| V | 112 | 125 | 140 | 140 | 160 | 190 | 216 | 216 | 254 | 254 | 279 | 318 |
| W | 13 | 14 | 14 | 14 | 16 | 17 | 28 | 28 | 20 | 20 | 15 | 19 |
| X | 8 | 10 | 11 | 11 | 12 | 15 | 16 | 16 | 22 | 22 | 20 | 32 |
| Y | 71 | 80 | 90 | 90 | 100 | 112 | 132 | 132 | 160 | 160 | 190 | 200 |
| Z | M20 | M20 | M25 | M25 | M25 | M25 | M25-M32 | M25-M32 | M25-M32 | M25-M32 | M25-M32 | M25-M32 |

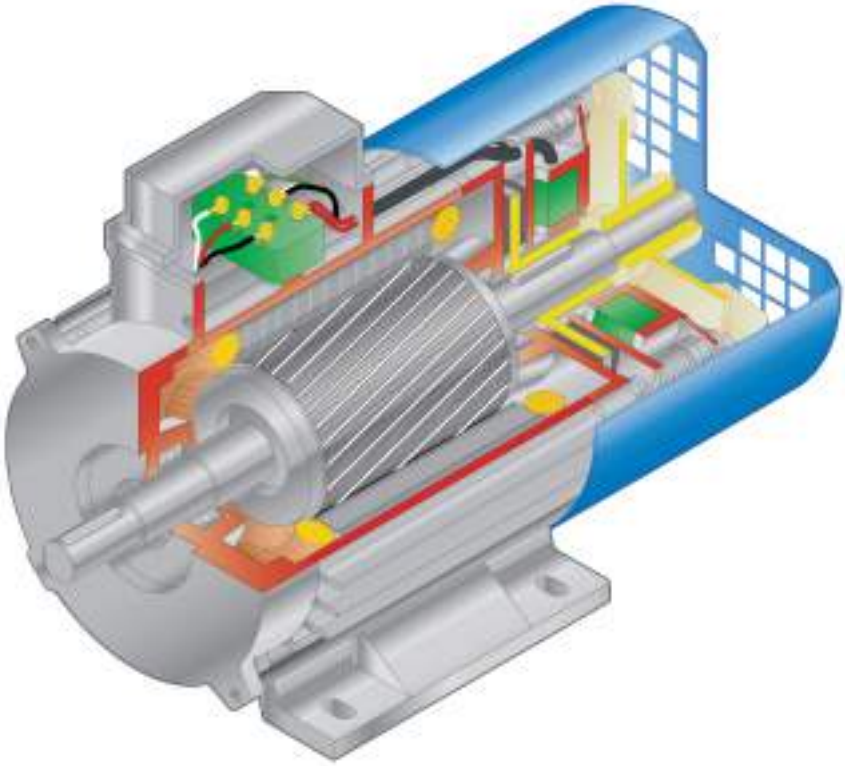
# **FK** SERIES brake motors

FK motors are closed and externally ventilated.
The brake is supplied DC with rectifier.
FK motors can be driven by inveerter but in this case it's necessary tu supply the brake separately from the motor.
The cases are in die pressed aluminium and braking surfaces are in cast iron.
Shafts are fitted with an hexagon on the back side for the manual rotation of the shaft.
The lateral hand release of the brake is available on request. FK motors are compact and light available with a wide range of options.

## *General features*

- Disk brake without axial sliding of the shaft.
- Electromagnets incapsulated in resin with IP66 protection
- Adjustment of braking torque within very large values
- DC electromagnet as standard

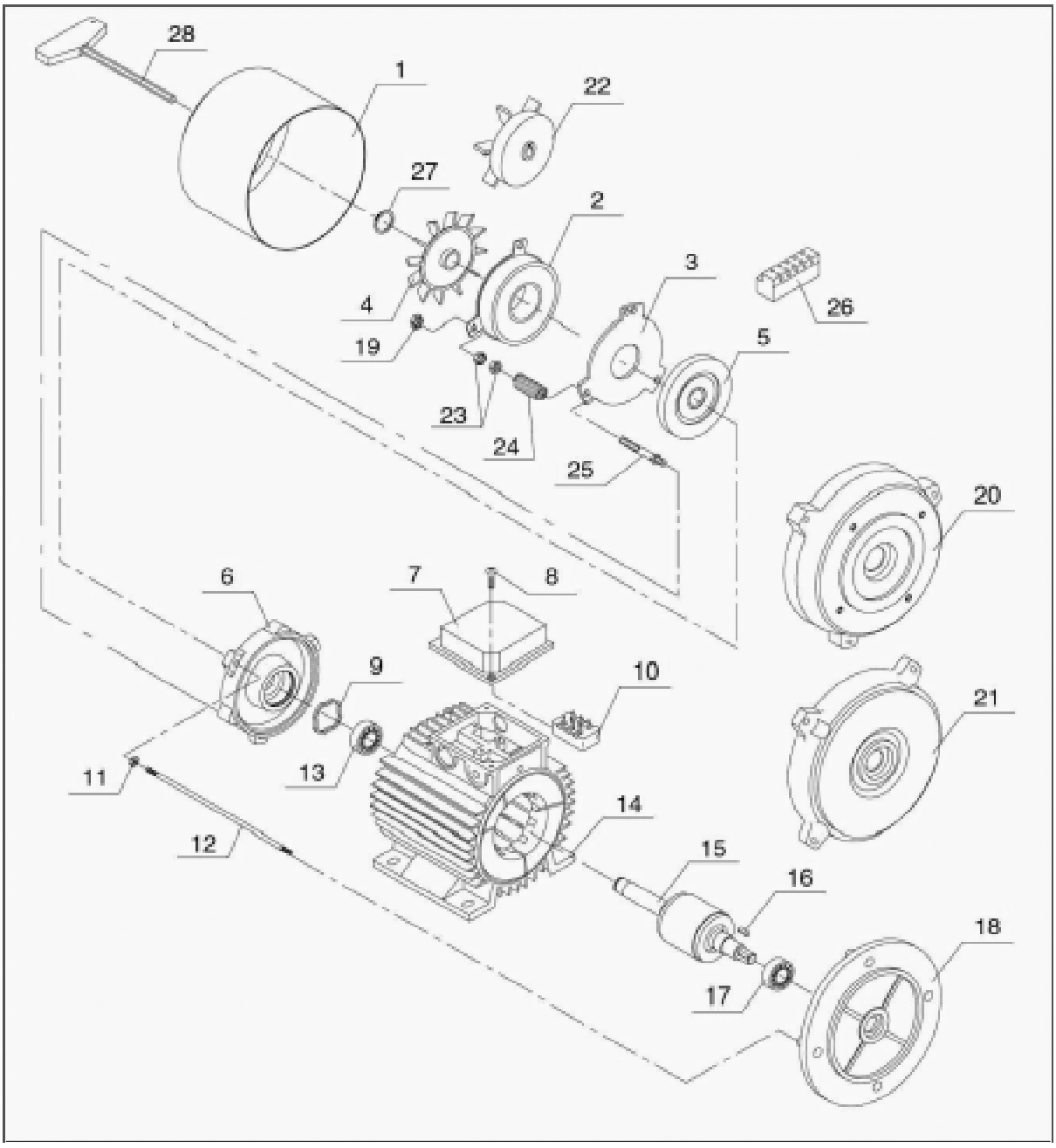
# **FK** SERIES brake motors



## *POSSIBLE PRODUCT CONFIGURATIONS*

- H class insulance
- IP 55
- Special “P” rotor for high starting torque
- Special painting
- Thermal  PTC or PTO protectors
- Anti condensation heaters
- R or S type balancing of the rotor
- Encoder fitting
- Lateral brake hand release
- FKL series with progreessive start and braking
- FKP series with positive brake*
- FKDF series with double brake application*
- Foot mounted B3
- Foot and flange mounting
- B5 or B14 flanged
- B5 reduced flange from frame 71 to 112
- B14 reduced flange from frame 71 to 100
- Reduced shafts
- Double end shafts
- Special shafts
- Motors B3 with lateral terminal box (up side as standard)
- Customized executions
- Special windings
- Version with forced ventilation

# FK spare parts




| | | | |
|---|---|---|---|
| 1 | Fan cover | 15 | Rotor shaft group |
| 2 | Electromagnet | 16 | Key |
| 3 | Mobil anchor | 17 | Front bearing |
| 4 | Fan | 18 | B5 flange |
| 5 | Brake disk | 19 | Electromagnet locking nuts |
| 6 | Back flange | 20 | B14 flange |
| 7 | Terminal box cover | 21 | B3 shield |
| 8 | Cover screws | 22 | Heavy fan |
| 9 | Compensation ring | 23 | Adjustment nuts |
| 10 | Terminal board | 24 | Brake springs |
| 11 | Drawrod locking nut - | 25 | Guide drawrods |
| 12 | Drawrod | 26 | Rectifier |
| 13 | Back side bearing | 27 | Seeger or locking nut - |
| 14 | Motor case | 28 | Manual rotation key - |

## FK BRAKE

FK brakes are DC supplied through a rectifier.
Windings are encapsulated with resins in F class.
Braking torque is adjustable for all types.
Brake discs are made in high resistance polymer; such solutions avoids deformation and incoming losses between the shaft and the disc also after long operation periods.
It guarantees an efficient anti sticking system and a reliable protection against humidity avoiding oxidation.
Friction materials are made with medium hardness mixtures due to guarantee low consuption and constand braking coefficient. The construction is modular and maintenance operations are simple.

FK brakes are available in standard or special voltages.

## BRAKE MAINTENANCE

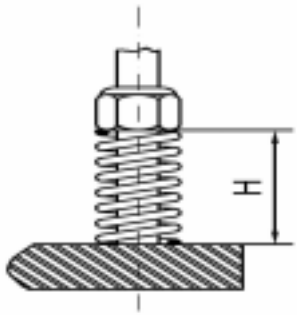
The mechanical structure of FK motors is the same of F.

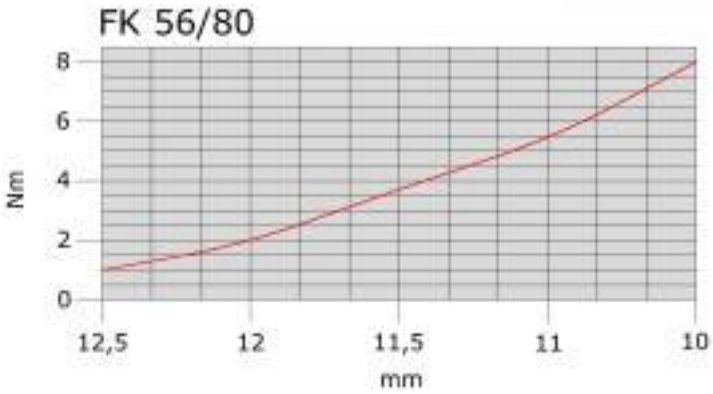
For maintenance please see page 19 of this catalogue

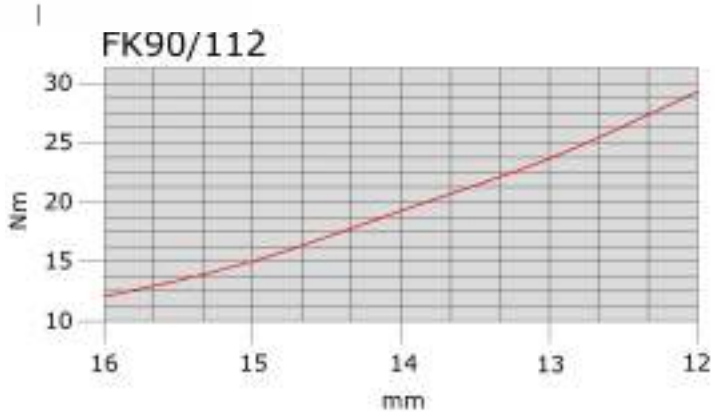
## BRAKING TORQUE

FK type motors are supplied with braking torque adjusted at 50/ 70% of maximum one
Braking torque is proportional to the compression of springs as shown in fig.1 and can be modified working on compression nuts. Compression of the springs (3 or 6) must be uniform. See the indicative following description to adjust the braking torque values. Different or lower values than indicated are available on request.
Special discs with braking coefficient are also available for special applications.

Please contact COEL for further information.



## 2 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | 230 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FK56B2 | 0,12 | 2785 | 0,66 | 0,45 | 2,4 | 2,9 | 0,00030 | 7 | 9500 | 150 | 4,2 |
| FK63A2 | 0,18 | 2760 | 0,68 | 0,70 | 2,3 | 3,5 | 0,00042 | 7 | 8000 | 150 | 4,8 |
| FK63B2 | 0,25 | 2810 | 0,80 | 0,80 | 2,3 | 3,9 | 0,00057 | 7 | 7500 | 150 | 4,8 |
| FK63C2* | 0,37 | 2780 | 0,78 | 1,10 | 2,4 | 4,0 | 0,00061 | 7 | 6000 | 150 | 5 |
| FK71A2 | 0,37 | 2765 | 0,79 | 1,05 | 2,5 | 3,9 | 0,00071 | 7*** | 6000 | 150 | 7 |
| FK71B2 | 0,55 | 2780 | 0,79 | 1,50 | 2,5 | 3,9 | 0,00082 | 7*** | 5000 | 150 | 8 |
| FK71C2* | 0,75 | 2800 | 0,76 | 2,10 | 2,3 | 4,3 | 0,00098 | 7*** | 4000 | 150 | 9 |
| FK80A2 | 0,75 | 2780 | 0,77 | 2,00 | 3,0 | 4,8 | 0,00146 | 7*** | 6000 | 150 | 10 |
| FK80B2 | 1,10 | 2780 | 0,82 | 2,90 | 3,0 | 4,9 | 0,00173 | 7*** | 5300 | 150 | 12,5 |
| FK90SA2 | 1,50 | 2780 | 0,86 | 3,50 | 2,5 | 6,8 | 0,00189 | 20 | 4000 | 300 | 18 |
| FK90SB2 | 1,84 | 2780 | 0,86 | 4,30 | 2,5 | 6,8 | 0,00200 | 20 | 3500 | 300 | 19 |
| FK90LA2 | 2,20 | 2800 | 0,88 | 5,10 | 2,5 | 6,8 | 0,00232 | 20 | 3000 | 300 | 20 |
| FK100LA2 | 3,00 | 2800 | 0,88 | 6,50 | 2,9 | 8,0 | 0,00572 | 20** | 1200 | 300 | 23 |
| FK112MB2 | 4,00 | 2820 | 0,87 | 8,20 | 2,4 | 7,4 | 0,00720 | 20** | 800 | 300 | 40 |

## 4 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | 230 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FK56B4 | 0,09 | 1320 | 0,60 | 0,38 | 1,80 | 2,6 | 0,00030 | 7 | 12500 | 150 | 4,3 |
| FK63A4 | 0,12 | 1350 | 0,70 | 0,54 | 1,95 | 2,8 | 0,00042 | 7 | 12000 | 150 | 5,5 |
| FK63B4 | 0,18 | 1340 | 0,70 | 0,60 | 1,80 | 2,3 | 0,00057 | 7 | 12000 | 150 | 5,5 |
| FK63C4* | 0,23 | 1330 | 0,68 | 0,80 | 2,20 | 2,4 | 0,00061 | 7 | 10000 | 150 | 5,9 |
| FK71A4 | 0,25 | 1400 | 0,65 | 0,9 | 2,70 | 3,9 | 0,00071 | 7*** | 19500 | 150 | 9,5 |
| FK71B4 | 0,37 | 1390 | 0,68 | 1,1 | 2,70 | 4,1 | 0,00082 | 7*** | 18000 | 150 | 10 |
| FK71C4* | 0,55 | 1360 | 0,72 | 1,7 | 2,30 | 3,1 | 0,00098 | 7*** | 15000 | 150 | 10,5 |
| FK80A4 | 0,55 | 1390 | 0,68 | 1,65 | 2,30 | 4,0 | 0,00146 | 7*** | 10000 | 150 | 10 |
| FK80B4 | 0,75 | 1400 | 0,7 | 2,15 | 2,60 | 4,2 | 0,00173 | 7*** | 10000 | 150 | 12,5 |
| FK80C4* | 0,90 | 1390 | 0,69 | 2,7 | 2,50 | 4,3 | 0,00185 | 7*** | 9000 | 150 | 14,5 |
| FK90SA4 | 1,10 | 1400 | 0,77 | 2,7 | 2,30 | 4,6 | 0,00284 | 20 | 10000 | 300 | 18 |
| FK90LA4 | 1,50 | 1400 | 0,77 | 3,7 | 3,00 | 4,9 | 0,00305 | 20 | 10000 | 300 | 20 |
| FK90LB4* | 1,85 | 1400 | 0,77 | 4,3 | 3,00 | 4,6 | 0,00388 | 20 | 9000 | 300 | 22 |
| FK90LC4* | 2,20 | 1400 | 0,78 | 5,4 | 2,90 | 4,3 | 0,00430 | 20 | 8000 | 300 | 24 |
| FK100LA4 | 2,20 | 1410 | 0,78 | 5,0 | 2,70 | 5,5 | 0,00572 | 20** | 7500 | 300 | 24 |
| FK100LB4 | 3,00 | 1410 | 0,82 | 6,4 | 2,70 | 5,0 | 0,00612 | 20** | 7000 | 300 | 26 |
| FK100LC4* | 3,30 | 1410 | 0,8 | 7,5 | 2,60 | 4,7 | 0,00750 | 20** | 6800 | 300 | 30 |
| FK112MB4 | 4,00 | 1430 | 0,84 | 8,2 | 2,70 | 5,8 | 0,01180 | 20** | 3300 | 300 | 40 |

* Non unified powers

** Nm 40 on request

*** Nm 10 on request

## 6 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | 230 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FK63C6 | 0,12 | 900 | 0,58 | 0,60 | 2,0 | 2,7 | 0,00072 | 7 | 20000 | 150 | 5,5 |
| FK71A6 | 0,18 | 900 | 0,69 | 0,8 | 1,9 | 2,5 | 0,00091 | 7*** | 22000 | 150 | 9,5 |
| FK71B6 | 0,25 | 910 | 0,69 | 1,0 | 2,0 | 2,5 | 0,00123 | 7*** | 22000 | 150 | 10 |
| FK71C6* | 0,30 | 900 | 0,68 | 1,2 | 1,9 | 2,6 | 0,00141 | 7*** | 19000 | 150 | 11 |
| FK80A6 | 0,37 | 900 | 0,66 | 1,30 | 2,6 | 3,5 | 0,00223 | 7*** | 18000 | 150 | 12 |
| FK80B6 | 0,55 | 900 | 0,68 | 1,80 | 2,6 | 3,5 | 0,00280 | 7*** | 18000 | 150 | 13 |
| FK90SA6 | 0,75 | 910 | 0,68 | 2,3 | 2,2 | 3,3 | 0,00356 | 20 | 18000 | 300 | 16 |
| FK90LA6 | 1,10 | 910 | 0,68 | 3,3 | 2,3 | 3,7 | 0,00472 | 20 | 14000 | 300 | 19 |
| FK100LA6 | 1,50 | 930 | 0,71 | 3,9 | 2,4 | 4,3 | 0,00874 | 20** | 9000 | 300 | 27 |
| FK100LB6* | 1,85 | 920 | 0,68 | 5,0 | 2,6 | 4,3 | 0,00996 | 20** | 8500 | 300 | 30 |
| FK112MB6 | 2,20 | 940 | 0,78 | 5,2 | 2,3 | 5,3 | 0,01680 | 20** | 4500 | 300 | 43 |

## 8 POLES

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm | Starts C/h | 230 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FK63C8 | 0,07 | 650 | 0,53 | 0,65 | 2,3 | 1,7 | 0,00072 | 8 | 20000 | 150 | 5,1 |
| FK71B8 | 0,12 | 660 | 0,55 | 0,9 | 2,0 | 2,7 | 0,00123 | 8 | 22000 | 150 | 8 |
| FK80A8 | 0,18 | 670 | 0,59 | 1,0 | 1,8 | 3,2 | 0,00223 | 8 | 20000 | 150 | 12 |
| FK80B8 | 0,25 | 670 | 0,64 | 1,3 | 1,7 | 3,0 | 0,00280 | 8 | 19000 | 150 | 13 |
| FK90SA8 | 0,37 | 690 | 0,56 | 1,6 | 2,2 | 2,8 | 0,00356 | 20 | 20000 | 300 | 16 |
| FK90LA8 | 0,55 | 690 | 0,57 | 2,3 | 2,2 | 2,9 | 0,00472 | 20 | 18000 | 300 | 22 |
| FK100LA8 | 0,75 | 700 | 0,59 | 2,8 | 2,3 | 3,2 | 0,00874 | 20** | 12000 | 300 | 27 |
| FK100LB8 | 1,10 | 700 | 0,6 | 3,6 | 2,1 | 3,5 | 0,00996 | 20** | 10000 | 300 | 30 |
| FK112MB8 | 1,50 | 710 | 0,65 | 4,5 | 1,9 | 4,0 | 0,01680 | 20** | 5000 | 300 | 43 |

* Non unified powers

** Nm 40 on request

*** Nm 10 on request

# 2/4 POLES single winding

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | 400 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FKD63B2/4 | 0,23 | 2800 | 0,75 | 0,75 | 2,9 | 4,1 | 0,00057 | 7*** | 5000 | 90 | 5,5 |
| | 0,15 | 1330 | 0,65 | 0,70 | 3,0 | 3,2 | | | 6500 | | |
| FKD63C2/4 | 0,26 | 2800 | 0,72 | 0,95 | 3,0 | 4,6 | 0,00061 | 7*** | 4500 | 90 | 5,1 |
| | 0,17 | 1330 | 0,56 | 0,85 | 3,0 | 3,3 | | | 6000 | | |
| FKD71A2/4 | 0,26 | 2800 | 0,73 | 0,8 | 2,5 | 4,6 | 0,00071 | 7*** | 7000 | 90 | 9,5 |
| | 0,18 | 1380 | 0,68 | 0,7 | 2,4 | 3,9 | | | 12000 | | |
| FKD71B2/4 | 0,37 | 2800 | 0,85 | 0,90 | 2,4 | 4,7 | 0,00082 | 7*** | 6000 | 90 | 10 |
| | 0,26 | 1390 | 0,78 | 0,90 | 2,3 | 3,0 | | | 10000 | | |
| FKD71C2/4 | 0,45 | 2800 | 0,76 | 1,4 | 2,6 | 4,7 | 0,00098 | 7*** | 5500 | 90 | 10,5 |
| | 0,30 | 1390 | 0,70 | 1,1 | 2,3 | 3,9 | | | 9000 | | |
| FKD80A2/4 | 0,65 | 2800 | 0,77 | 1,8 | 2,3 | 5,0 | 0,00146 | 7*** | 3000 | 90 | 11 |
| | 0,45 | 1400 | 0,72 | 1,4 | 2,2 | 4,8 | | | 10000 | | |
| FKD80B2/4 | 0,9 | 2800 | 0,78 | 2,3 | 2,4 | 5,1 | 0,00173 | 7*** | 2500 | 90 | 12,5 |
| | 0,6 | 1415 | 0,73 | 1,8 | 2,3 | 5,0 | | | 8000 | | |
| FKD90SB2/4 | 1,3 | 2800 | 0,85 | 3,3 | 2,3 | 4,7 | 0,00295 | 20 | 2000 | 180 | 20 |
| | 0,9 | 1420 | 0,73 | 2,4 | 2,3 | 4,5 | | | 7500 | | |
| FKD90LA2/4 | 1,8 | 2800 | 0,81 | 4,5 | 2,7 | 4,9 | 0,00305 | 20 | 2000 | 180 | 20 |
| | 1,2 | 1420 | 0,71 | 3,2 | 2,9 | 4,8 | | | 7000 | | |
| FKD90LB2/4 | 2,2 | 2800 | 0,80 | 5,5 | 2,7 | 4,9 | 0,00388 | 20 | 1800 | 180 | 22 |
| | 1,5 | 1400 | 0,74 | 3,9 | 3,0 | 4,6 | | | 7000 | | |
| FKD100LA2/4 | 2,5 | 2860 | 0,85 | 5,2 | 2,6 | 6,2 | 0,00572 | 20** | 1000 | 180 | 23 |
| | 1,9 | 1420 | 0,82 | 3,9 | 2,4 | 5,4 | | | 5500 | | |
| FKD100LB2/4 | 3,3 | 2870 | 0,85 | 7,0 | 2,8 | 7,0 | 0,00612 | 20** | 1000 | 180 | 26 |
| | 2,4 | 1420 | 0,77 | 5,3 | 2,5 | 6,3 | | | 5000 | | |
| FKD112MB2/4 | 4,5 | 2880 | 0,87 | 9,3 | 2,4 | 7,0 | 0,01180 | 20** | 500 | 180 | 40 |
| | 3,3 | 1410 | 0,86 | 6,9 | 2,3 | 6,3 | | | 2000 | | |

** Nm 40 on request

*** Nm 10 on request

COEL

## 2/6 POLES double winding

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | 400 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FKDA71B2/6 | 0,25 | 2850 | 0,75 | 0,95 | 2,4 | 4,5 | 0,00082 | 7*** | 3800 | 90 | 8,5 |
| | 0,08 | 930 | 0,65 | 0,75 | 2,0 | 2,4 | | | 12000 | | |
| FKDA71C2/6 | 0,35 | 2860 | 0,73 | 1,1 | 2,3 | 5,0 | 0,00098 | 7*** | 3600 | 90 | 9,5 |
| | 0,10 | 950 | 0,66 | 1,0 | 2,1 | 3,4 | | | 11000 | | |
| FKDA80A2/6 | 0,37 | 2860 | 0,66 | 1,4 | 2,5 | 4,9 | 0,00146 | 7*** | 20000 | 90 | 12 |
| | 0,12 | 930 | 0,58 | 0,9 | 2,1 | 3,3 | | | 10000 | | |
| FKDA80B2/6 | 0,55 | 2860 | 0,67 | 1,9 | 2,3 | 5,2 | 0,00173 | 7*** | 2000 | 90 | 13 |
| | 0,18 | 940 | 0,56 | 1,2 | 2,1 | 3,3 | | | 10000 | | |
| FKDA90SA2/6 | 0,90 | 2870 | 0,84 | 2,1 | 2,6 | 6,5 | 0,00284 | 20 | 1900 | 180 | 17 |
| | 0,30 | 940 | 0,64 | 1,2 | 2,2 | 2,5 | | | 9000 | | |
| FKDA90LA2/6 | 1,20 | 2870 | 0,81 | 2,9 | 2,3 | 6,3 | 0,00305 | 20 | 1800 | 180 | 20 |
| | 0,40 | 950 | 0,66 | 1,7 | 2,0 | 3,5 | | | 8000 | | |
| FKDA100LB2/6 | 2,20 | 2800 | 0,85 | 4,9 | 2,7 | 6,7 | 0,00612 | 20** | 900 | 180 | 26 |
| | 0,80 | 910 | 0,64 | 2,6 | 2,2 | 3,5 | | | 6000 | | |
| FKDA112MB2/6 | 3,00 | 2880 | 0,85 | 6,60 | 2,9 | 7,1 | 0,01180 | 20** | 500 | 180 | 44 |
| | 1,00 | 930 | 0,62 | 3,5 | 2,3 | 4,0 | | | 4000 | | |

## 2/8 POLES double winding

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | 400 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FKDA63C2/8 | 0,18 | 2690 | 0,8 | 0,80 | 2,4 | 5,0 | 0,00061 | 7 | 5000 | 90 | 5,5 |
| | 0,04 | 625 | 0,6 | 0,50 | 1,7 | 2,2 | | | 12000 | | |
| FKDA71B2/8 | 0,25 | 2800 | 0,71 | 0,95 | 2,4 | 4,5 | 0,00082 | 7*** | 3600 | 90 | 8,5 |
| | 0,06 | 690 | 0,6 | 0,60 | 1,9 | 2,3 | | | 15000 | | |
| FKDA71C2/8 | 0,35 | 2800 | 0,71 | 1,3 | 2,3 | 5,0 | 0,00098 | 7*** | 3600 | 90 | 9,5 |
| | 0,07 | 690 | 0,6 | 0,7 | 1,9 | 2,2 | | | 15000 | | |
| FKDA80B2/8 | 0,37 | 2800 | 0,66 | 1,4 | 2,5 | 4,4 | 0,00146 | 7*** | 2000 | 90 | 12 |
| | 0,09 | 690 | 0,53 | 0,75 | 1,9 | 2,3 | | | 12000 | | |
| FKDA80B2/8 | 0,55 | 2800 | 0,69 | 1,9 | 2,3 | 5,2 | 0,00173 | 7*** | 2000 | 90 | 13 |
| | 0,12 | 690 | 0,53 | 0,9 | 2 | 5,4 | | | 12000 | | |
| FKDA90SB2/8 | 0,75 | 2820 | 0,70 | 2,1 | 2,6 | 5,5 | 0,00295 | 20 | 1900 | 180 | 19 |
| | 0,18 | 700 | 0,54 | 1,1 | 1,9 | 2,3 | | | 10000 | | |
| FKDA90LA2/8 | 1,10 | 2820 | 0,75 | 2,7 | 2,5 | 5,6 | 0,00305 | 20 | 1800 | 180 | 20 |
| | 0,25 | 700 | 0,55 | 1,5 | 1,9 | 2,4 | | | 10000 | | |
| FKDA90LB2/8 | 1,30 | 2820 | 0,78 | 3,1 | 2,4 | 5,8 | 0,00388 | 20 | 1800 | 180 | 22 |
| | 0,30 | 700 | 0,58 | 1,8 | 2 | 2,3 | | | 9000 | | |
| FKDA100LA2/8 | 1,50 | 2820 | 0,78 | 3,9 | 2,6 | 5,6 | 0,00572 | 20** | 1000 | 180 | 23 |
| | 0,37 | 700 | 0,56 | 2,2 | 1,8 | 2,8 | | | 7000 | | |
| FKDA100LB2/8 | 2,20 | 2840 | 0,87 | 4,9 | 2,5 | 5,1 | 0,00612 | 20** | 900 | 180 | 26 |
| | 0,50 | 700 | 0,58 | 2,8 | 1,8 | 2,9 | | | 3000 | | |
| FKDA112MA2/8 | 2,50 | 2840 | 0,74 | 5,8 | 2,4 | 5,5 | 0,00950 | 20** | 500 | 180 | 38 |
| | 0,60 | 705 | 0,57 | 3,2 | 1,9 | 3,0 | | | 2500 | | |
| FKDA112MB2/8 | 3,00 | 2850 | 0,74 | 6,7 | 2,5 | 6,0 | 0,01180 | 20** | 500 | 180 | 40 |
| | 0,80 | 705 | 0,59 | 3,6 | 2 | 3,0 | | | 2500 | | |

** Nm 40 on request *** Nm 10 on request

## 4/6 POLES double winding

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | 400 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FKDA71A4/6 | 0,13 | 1360 | 0,70 | 0,7 | 2,3 | 4,5 | 0,00091 | 7*** | 7000 | 90 | 8 |
| | 0,08 | 890 | 0,64 | 0,4 | 2,0 | 3 | | | 10000 | | |
| FKDA71B4/6 | 0,18 | 1370 | 0,72 | 0,7 | 2,3 | 4,5 | 0,00123 | 7*** | 7000 | 90 | 8,5 |
| | 0,11 | 900 | 0,67 | 0,5 | 2,2 | 2,9 | | | 10000 | | |
| FKDA80A4/6 | 0,26 | 1390 | 0,75 | 1,0 | 2,4 | 4,8 | 0,00223 | 7*** | 7000 | 90 | 12 |
| | 0,18 | 930 | 0,68 | 0,9 | 2,0 | 3 | | | 10000 | | |
| FKDA80B4/6 | 0,37 | 1400 | 0,76 | 1,1 | 2,5 | 4,8 | 0,00280 | 7*** | 6000 | 90 | 13 |
| | 0,26 | 930 | 0,69 | 1,0 | 2,0 | 3 | | | 8000 | | |
| FKDA90SA4/6 | 0,55 | 1410 | 0,77 | 1,8 | 2,4 | 5,5 | 0,00356 | 20 | 6000 | 180 | 17 |
| | 0,37 | 945 | 0,70 | 1,6 | 2,1 | 3,6 | | | 8000 | | |
| FKDA90LA4/6 | 0,75 | 1410 | 0,79 | 2,4 | 2,3 | 5,6 | 0,00472 | 20 | 9500 | 180 | 20 |
| | 0,55 | 945 | 0,60 | 2 | 2,2 | 3,3 | | | 8000 | | |
| FKDA100LB4/6 | 1,50 | 1420 | 0,79 | 3,9 | 2,6 | 5,6 | 0,00996 | 20** | 4000 | 180 | 28 |
| | 1,10 | 945 | 0,70 | 3,2 | 2,3 | 3,5 | | | 6000 | | |
| FKDA112MB4/6 | 2,00 | 1430 | 0,86 | 4,5 | 2,4 | 5,3 | 0,01680 | 20** | 2000 | 180 | 43 |
| | 1,30 | 950 | 0,71 | 3,6 | 2,0 | 4,5 | | | 3000 | | |

## 4/8 POLES single winding

| TYPE | KW | RPM | PF | I n V400 | Ma/Mn | IA/IN | Inertia moment Jx kgm² | Brake Torque Max Nm. | Starts C/h | 400 1ph AC brake In (mA) | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FKD71A4/8 | 0,13 | 1360 | 0,83 | 0,5 | 2,0 | 3,7 | 0,00091 | 7*** | 12000 | 90 | 10 |
| | 0,07 | 680 | 0,62 | 0,5 | 2,2 | 2,5 | | | 20000 | | |
| FKD71B4/8 | 0,18 | 1360 | 0,82 | 0,7 | 2,2 | 3,8 | 0,00123 | 7*** | 10000 | 90 | 10,5 |
| | 0,09 | 680 | 0,63 | 0,7 | 1,9 | 2,6 | | | 20000 | | |
| FKD71C4/8 | 0,22 | 1360 | 0,80 | 0,8 | 2,1 | 3,9 | 0,00141 | 7*** | 9000 | 90 | 11 |
| | 0,12 | 670 | 0,60 | 0,8 | 1,9 | 2,7 | | | 20000 | | |
| FKD80A4/8 | 0,26 | 1410 | 0,83 | 0,9 | 2,2 | 5,5 | 0,00203 | 7*** | 7000 | 90 | 14,5 |
| | 0,18 | 6750 | 0,60 | 0,9 | 1,9 | 3,0 | | | 14000 | | |
| FKD80B4/8 | 0,37 | 1405 | 0,84 | 0,9 | 2,3 | 5,5 | 0,00280 | 7*** | 7000 | 90 | 15,5 |
| | 0,26 | 675 | 0,64 | 1,2 | 2,0 | 2,8 | | | 14000 | | |
| FKD90SA4/8 | 0,75 | 1400 | 0,85 | 2,1 | 1,9 | 4,0 | 0,00356 | 20 | 6500 | 180 | 20 |
| | 0,37 | 700 | 0,60 | 1,9 | 2,2 | 3,0 | | | 12000 | | |
| FKD90LB4/8 | 1,10 | 1400 | 0,85 | 2,7 | 2,0 | 4,0 | 0,00505 | 20 | 6000 | 180 | 24 |
| | 0,60 | 700 | 0,58 | 3,0 | 2,2 | 3,0 | | | 10000 | | |
| FKD100LB4/8 | 1,60 | 1440 | 0,85 | 3,7 | 2,2 | 4,6 | 0,00996 | 20** | 4000 | 180 | 39,7 |
| | 0,90 | 700 | 0,61 | 3,5 | 2,2 | 3,2 | | | 8000 | | |
| FKD112MB4/8 | 2,20 | 1440 | 0,89 | 4,6 | 2,2 | 5,6 | 0,01680 | 20** | 2000 | 180 | 42 |
| | 1,20 | 710 | 0,59 | 4,8 | 3,0 | 4,0 | | | 4000 | | |

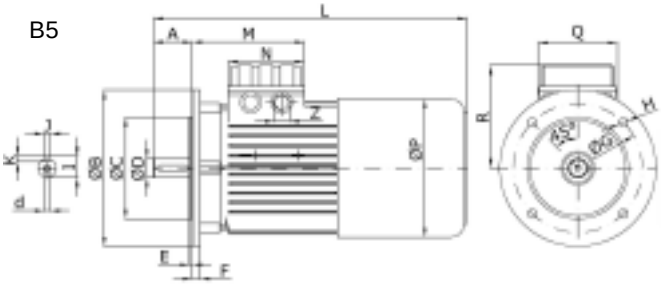
** Nm 40 on request

*** Nm 10 on request

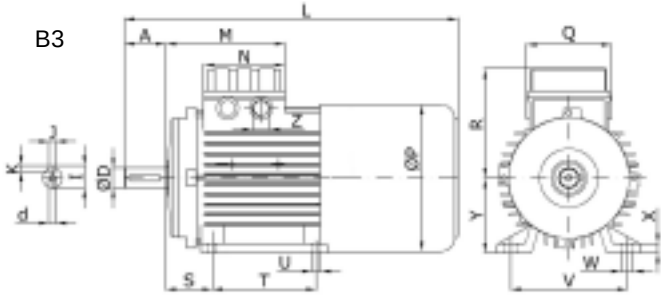
sales@tvtamerica.com www.tvtamerica.com ph/fx: 866 285 5055

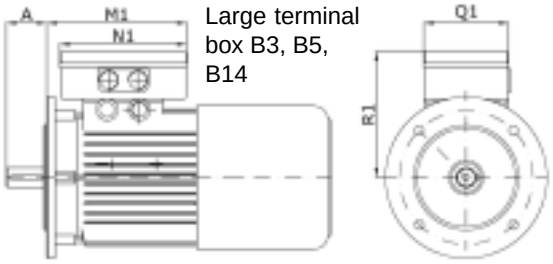
# Overall dimensions

B5

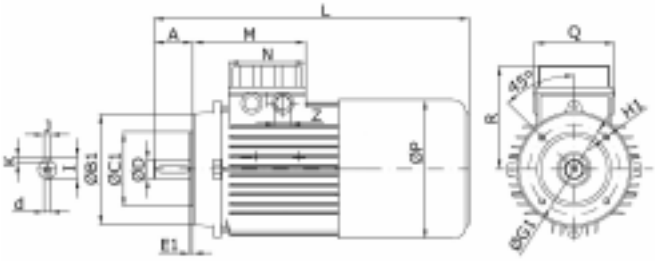


B3



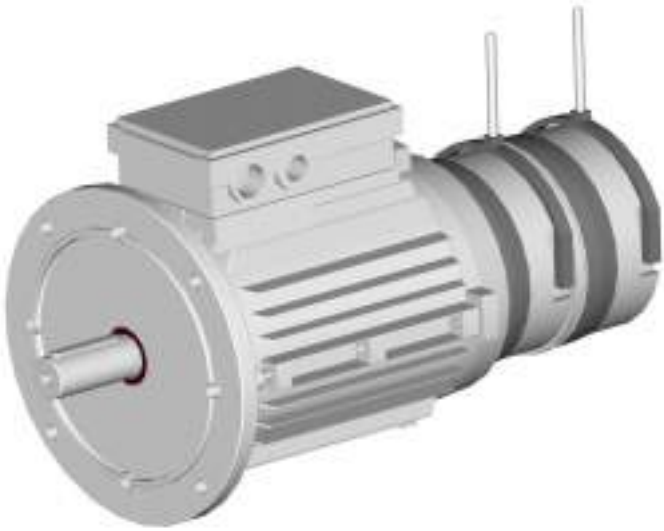


Large terminal box B3, B5, B14



| TIPO FK | 56 | 63 | 71 | 80 | 90S | 90L | 100 | 112 |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| A | 20 | 23 | 30 | 40 | 50 | 50 | 60 | 60 |
| ØB | 120 | 140 | 160 | 200 | 200 | 200 | 250 | 250 |
| ØB1 | 80 | 90 | 105 | 120 | 140 | 140 | 160 | 160 |
| ØC | 80 | 95 | 110 | 130 | 130 | 130 | 180 | 180 |
| ØC1 | 50 | 60 | 70 | 80 | 95 | 95 | 110 | 110 |
| ØD | 9 | 11 | 14 | 19 | 24 | 24 | 28 | 28 |
| d | M4 | M4 | M5 | M6 | M8 | M8 | M8 | M8 |
| E | 2,5 | 2,5 | 3,5 | 3,5 | 3,5 | 3,5 | 4 | 4 |
| E1 | 2,5 | 2,5 | 2,5 | 3 | 3 | 3 | 3,5 | 3,5 |
| F | 9 | 9 | 9 | 11,5 | 10 | 10 | 14 | 14 |
| ØG | 100 | 115 | 130 | 165 | 165 | 165 | 215 | 215 |
| ØG1 | 65 | 75 | 85 | 100 | 115 | 115 | 130 | 130 |
| ØH | 7,5 | 9,5 | 9,5 | 11,5 | 11,5 | 11,5 | 14,5 | 14,5 |
| H1 | M5 | M5 | M6 | M6 | M8 | M8 | M8 | M8 |
| I | 10,2 | 12,5 | 16 | 21,5 | 27 | 27 | 31 | 31 |
| J | 3 | 4 | 5 | 6 | 8 | 8 | 8 | 8 |
| K | 3 | 4 | 5 | 6 | 7 | 7 | 7 | 7 |
| L | 240 | 261 | 289 | 340 | 343 | 407 | 439 | 481 |
| M | 99 | 112 | 111 | 117 | 143,5 | 143,5 | 148 | 150 |
| M1 | 99 | 135,5 | 137 | 140,5 | 173 | 173 | 177,5 | 179,5 |
| N | 74 | 80 | 80 | 80 | 98 | 98 | 98 | 98 |
| N1 | 74 | 127 | 127 | 127 | 157 | 157 | 157 | 157 |
| ØP | 111 | 124 | 138 | 155 | 177 | 177 | 195 | 220 |
| Q | 74 | 75 | 75 | 75 | 98 | 98 | 98 | 98 |
| Q1 | 74 | 82 | 82 | 82 | 105 | 105 | 105 | 105 |
| R | 96 | 93 | 104 | 112,5 | 131,5 | 131,5 | 139 | 155 |
| R1 | 96 | 125 | 136 | 144,5 | 156,5 | 156,5 | 164 | 180 |
| S | 36 | 40 | 45 | 50 | 56 | 56 | 63 | 72 |
| T | 71 | 80 | 90 | 100 | 100 | 125 | 140 | 140 |
| U | 6 | 7 | 7 | 10 | 10 | 10 | 12 | 12 |
| V | 90 | 100 | 112 | 125 | 140 | 140 | 160 | 190 |
| W | 11 | 10 | 13 | 14 | 14 | 14 | 16 | 17 |
| X | 9 | 7 | 8 | 10 | 11 | 11 | 12 | 15 |
| Y | 56 | 63 | 71 | 80 | 90 | 90 | 100 | 112 |
| Z | M18 | M16 | M20 | M20 | M25 | M25 | M25 | M25 |

# **FKDF** SERIES brake motors



## *DESCRIPTION*

FKDF (variant of FK series) brake motors are supplied with double brake group and suitable for stages motion application.
Both brakes are provided with lateral hand release and low noise system. Motors are in S2 duty and are available from frame 80 to 250. For performance data regarding frames 80 to 200 please see pages 21 to 30 of this catalogue.
For overall dimensions please contact COEL because they may change in relation to configuraton of the product.

## *POSSIBLE PRODUCT CONFIGURATIONS*

- H class insulation
- IP 55
- Special “P” rotor for high starting torqu
- Special painting
- Thermal PTC or PTO protectors
- Anti condensation heaters
- R or S type balancing of the rotor
- Encoder fitting
- Foot mounted B3
- Foot and flange mounting
- B5 or B14 flanged
- B5 reduced flange from frame 71 to 132
- B14 reduced flange from frame 71 to 100
- Reduced shafts
- Double end shafts
- Special shafts
- Motors B3 with lateral terminal box (up side as standard)
- Customized executions
- Special windings

Version with forced ventilation

# FKDF BRAKE

1 SPECIAL MOTORS WITH DOUBLE BRAKE FKDF FOR THEATRE

The applications of the brakes FKDF are indicated specially for the theatre stage motion application.
They are made so to obtain a very low working noise.

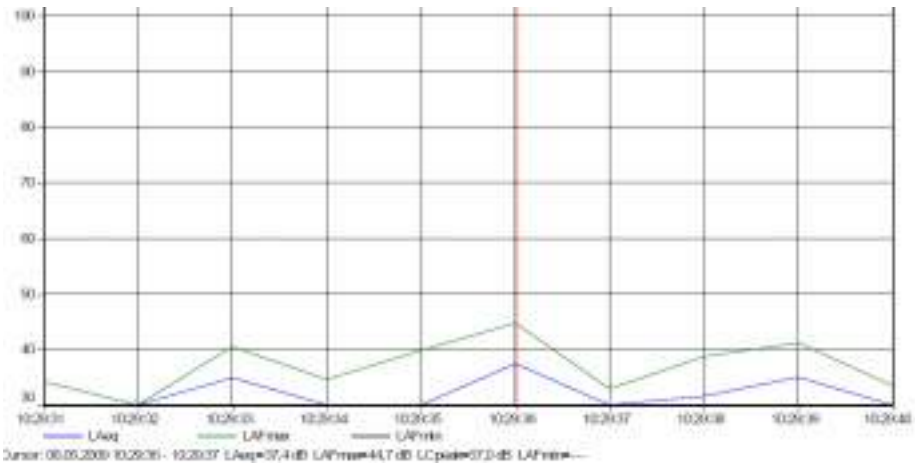
1.2 OPERATING

The brake is designed to assure, by means of the pressure springs and when no voltage is applied, the intrinsic safety equal than brake label value in Nm. On exciting the electromagnet the armature plate is pulled towards the electromagnet it self, thus loading the pressure springs and enabling the disc, which is axially movable on the toothed hub, to turn freely. When the current fails, the pressure springs drive the armature plate towards the disc, thus braking the motor shaft.

2 SERVICING AND REPAIRING

All parts of the brake must be checked frequently as the friction work depends on a number of factors, namely the brake inertia, the braking speed and the operating frequency. The substitution of the disk must be carried out considering the following principles:-wear of the disk; the friction material must be substituted before, if put under considerable stress due to the high working temperatures.-the disk must be substituted after a 3mm consumption of friction material. After checking make sure that the air-gap is correctly regulated. After checking ear thing carefully and when the brake is disconnected. When the air-gap value is 0.7 mm, you must bring it necessarily to its nominal value.

| BRAKE FKDF (STATIC BRAKING TORQUE FOR ONE BRAKE) | |
|---|---|
| FKDF4 | 16 Nm |
| FKDF5 | 35 Nm |
| FKDF6 | 60 Nm |
| FKDF7 | 80 Nm |
| FKDF8 | 150 Nm |
| FKDF9 | 250 Nm |



Typical noise test report made on double brakes to guarantee very low level of noise.

# **SW** SERIES brake motors

SW series brake motors are closed and not ventilated, suitable for S2 duty or S1 with forced ventilation.
This series has been designed for applications where the brake motor has often contacts with water such as marine environment .

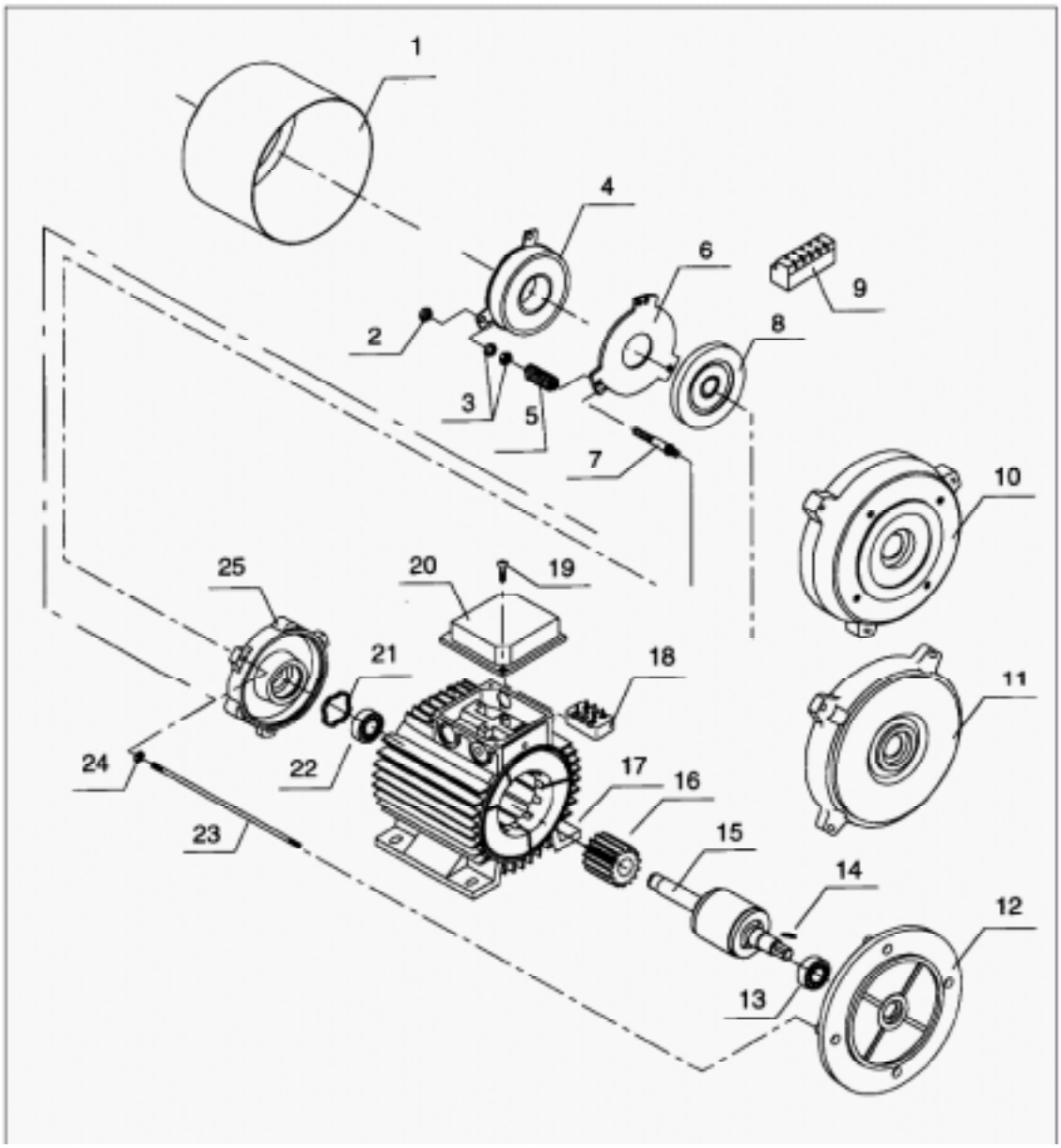
* These motors are painted as standard with special painting for a total protection.
* The protection level of this series is IP66 certified (see page 9 of his catalogue).
* Motor frames are in aluminum for 90 to 160 and cast iron for 180 to 315 types.
* On this catalogue are shown frames up to 250. Frames up to 315 are available on request.
* Anti-condensation heaters, thermal protections, epoxy painting and other options available.
* SW motors are available in single or double speed.

For technicall details please see F and FM performance data of this catalogue.

## *Standard features*

- Disk brake without axial sliding of the shaft.
- Adjustment of braking torque within very ample values.
- Brake operation within very low noise.
- SW motors are fitted with DC electromagnet as standard. The three-phase brake can be fitted on request on frames 112, 132, 160.
- Brakes mounted on SW series as standard are FK type for frame 90/100 and F type for 112/160; for upper frames the brake may change in relation to the client request.

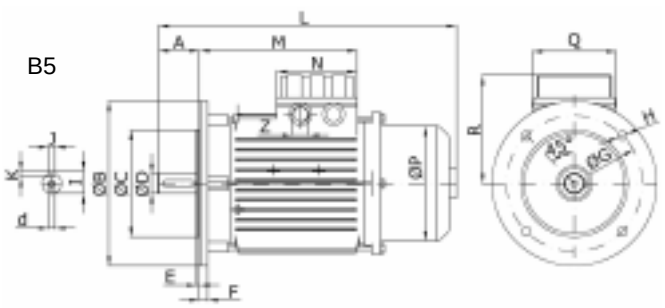
# Spare parts SW



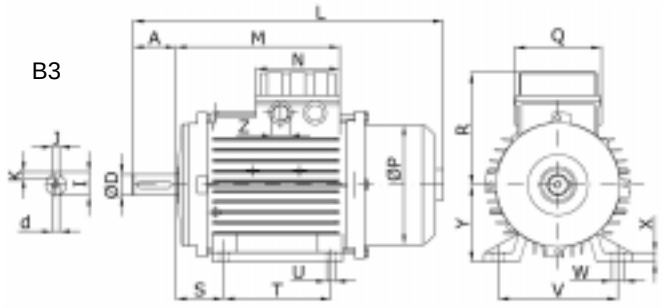

| | | | |
|---|---|---|---|
| 1 | Brake cover | 15 | Rotor - shaft group |
| 2 | Electromagnet locking nuts | 16 | Brake gear |
| 3 | Adjustment nuts | 17 | Motor case and winded stator |
| 4 | Electromagnet | 18 | Terminal board |
| 5 | Brake spring | 19 | Screws |
| 6 | Mobil anchor | 20 | Terminal board cover |
| 7 | Guide drawrods | 21 | Compensation ring |
| 8 | Brake disk | 22 | Back side bearing |
| 9 | Rectifier | 23 | Drawroads kit |
| 10 | B14 flange | 24 | Drawroad nuts |
| 11 | Front shield | 25 | Back side shield |
| 12 | B5 flange | | |
| 13 | Front bearing | | |
| 14 | Key | | |

# Overall Dimensions

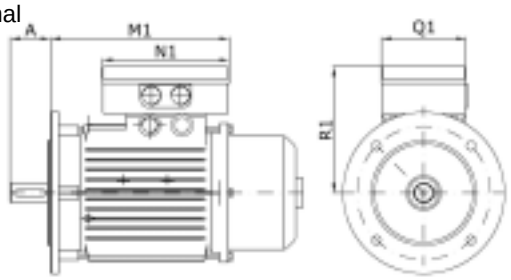
B5



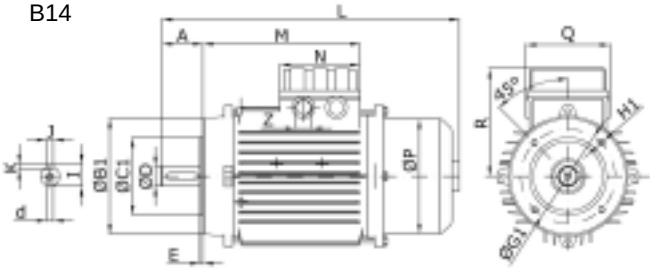

B3




Large terminal box B3, B5, B14




B14




| TIPO SW | 90S | 90L | 100 | 112 | 132S | 132M | 160M | 160L | 180L | 200L | 225S | 225M | 250M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| A | 50 | 50 | 60 | 60 | 80 | 80 | 110 | 110 | 110 | 110 | 140 | 140 | 140 |
| ØB | 200 | 200 | 250 | 250 | 300 | 300 | 350 | 350 | 350 | 400 | 450 | 450 | 550 |
| ØB1 | 140 | 140 | 160 | 160 | 200 | 200 | | | | | | | |
| ØC | 130 | 130 | 180 | 180 | 230 | 230 | 250 | 250 | 250 | 300 | 350 | 350 | 450 |
| ØC1 | 95 | 95 | 110 | 110 | 130 | 130 | | | | | | | |
| ØD | 24 | 24 | 28 | 28 | 38 | 38 | 42 | 42 | 48 | 55 | 60 | 60 | 65 |
| d | M8 | M8 | M8 | M8 | M10 | M10 | M10 | M10 | M16 | M20 | M20 | M20 | M20 |
| E | 3,5 | 3,5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| F | 10 | 10 | 14 | 14 | 17 | 17 | 16 | 16 | 13 | 16 | 18 | 18 | 19 |
| ØG | 165 | 165 | 215 | 215 | 265 | 265 | 300 | 300 | 300 | 350 | 400 | 400 | 500 |
| ØG1 | 115 | 115 | 130 | 130 | 165 | 165 | | | | | | | |
| ØH | 11,5 | 11,5 | 14,5 | 14,5 | 14,5 | 14,5 | 18 | 18 | 19 | 19 | 19 | 19 | 19 |
| H1 | M8 | M8 | M8 | M8 | M10 | M10 | | | | | | | |
| I | 27 | 27 | 31 | 31 | 41 | 41 | 45 | 45 | 51,5 | 59 | 64 | 64 | 69 |
| J | 8 | 8 | 8 | 8 | 10 | 10 | 12 | 12 | 14 | 16 | 18 | 18 | 18 |
| K | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 11 | 11 |
| L | 344 | 368 | 405 | 502 | 578 | 616 | 720 | 762 | 745 | 775 | 865 | 890 | 985 |
| M | 167,5 | 191,5 | 216 | 229 | 278 | 317 | 371,5 | 413,5 | 269 | 269 | // | // | // |
| M1 | 197 | 221 | 245,5 | 258,5 | 277 | 316 | | | | | | | |
| N | 98 | 98 | 98 | 98 | 130 | 130 | 180 | 180 | 175 | 175 | // | // | // |
| N1 | 157 | 157 | 157 | 157 | 200 | 200 | | | | | | | |
| ØP | 140 | 140 | 155 | 220 | 256 | 256 | 256 | 256 | 314 | 314 | 314 | 314 | 314 |
| Q | 98 | 98 | 98 | 98 | 130 | 130 | 180 | 180 | 185 | 185 | // | // | // |
| Q1 | 105 | 105 | 105 | 105 | 130 | 130 | | | | | | | |
| R | 131,5 | 131,5 | 139 | 155 | 197 | 197 | 248,5 | 248,5 | 271 | 305 | 310 | 310 | 340 |
| R1 | 156,5 | 156,5 | 164 | 180 | 197 | 197 | | | | | | | |
| S | 56 | 56 | 63 | 72 | 89 | 89 | 108 | 108 | 108 | 133 | 149 | 149 | 168 |
| T | 100 | 125 | 140 | 140 | 140 | 178 | 210 | 254 | 279 | 305 | 286 | 311 | 349 |
| U | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 15 | 19 | 19 | 19 | 24 |
| V | 140 | 140 | 160 | 190 | 216 | 216 | 254 | 254 | 279 | 318 | 356 | 356 | 406 |
| W | 14 | 14 | 16 | 17 | 28 | 28 | 20 | 20 | 15 | 19 | 19 | 19 | 24 |
| X | 11 | 11 | 12 | 15 | 16 | 16 | 22 | 22 | 20 | 32 | 34 | 34 | 36 |
| Y | 90 | 90 | 100 | 112 | 132 | 132 | 160 | 160 | 180 | 200 | 225 | 225 | 250 |
| Z | M25 | M25 | M25 | M25 | M25-M32 | M25-M32 | M25-M32 | M25-M32 | M25-M32 | M25-M32 | PG36 | PG36 | PG42 |

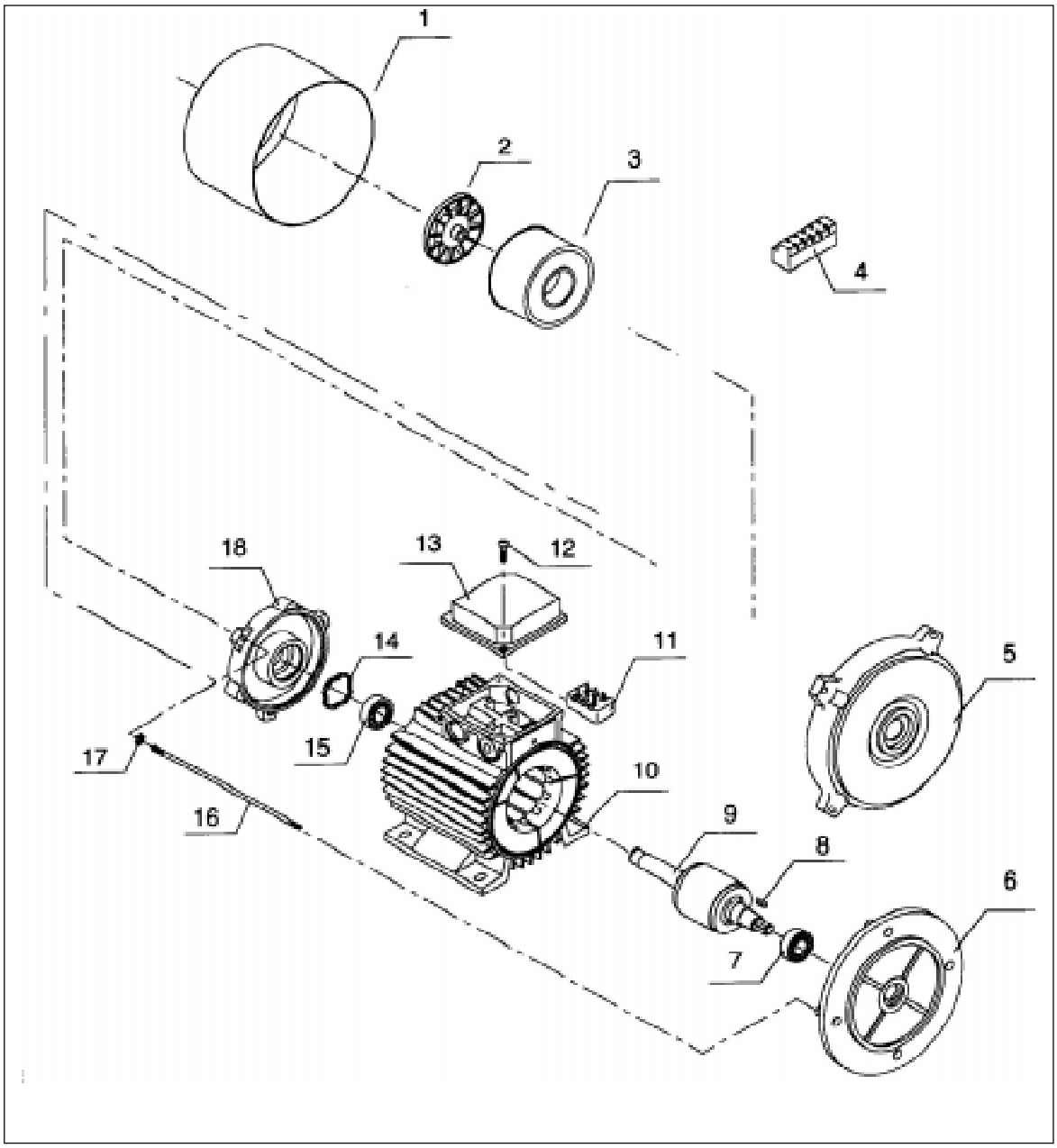
# FM SERIES brake motors

FM series brake motors are closed and externally ventilated, They cover a range between frame 225 and 315and are designed for heavy duty application.
FM motors frames are made in G20 cast iron.
The brakes mounted, made by COEL are DC supplied with rectifier mounted inside the terminal box.
FM brake motors can be equipped with many options like forced ventilation, encoder, brake sensors, thermal protercors and many others (please contact TVT for special requirements).
FM brake motors are available in single or double speed (double only on special request).

## *Standard features*

- Disk brake without axial sliding of the shaft.
- Adjustment of braking torque within very ample values.
- Brake operation within very low noise.
- DC electromagnet as standard

# Spare parts FM




| | | | |
|---|---|---|---|
| 1 | Fan cover | 10 | Motor case with winded stator |
| 2 | Fan | 11 | Terminal board |
| 3 | Brake group | 12 | Terminal board cover nuts |
| 4 | Rectifier | 13 | Terminal board cover |
| 5 | B3 shield | 14 | Compensation ring |
| 6 | B5 flange | 15 | Back side bearing |
| 7 | Front bearing | 16 | Drawrods |
| 8 | Key | 17 | Drawrod nuts |
| 9 | Rotor shaft group | 18 | Back side shield |

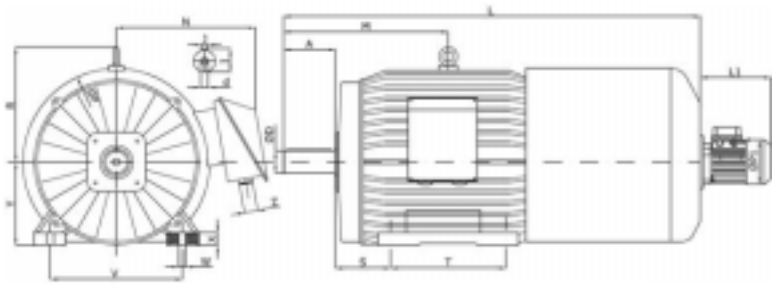
# FM brake motors 2-4-6-8 poles

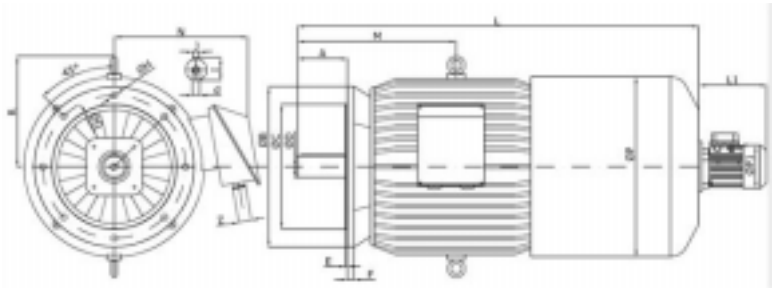


| Type | kW | r.p.m. | In V.400 | Cos. φ | n% | Ma/Mn | Ia/In | J | Kg | Braking Torque Nm. | W brake |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FM225M2 | 45 | 2950 | 81 | 0,88 | 91,5 | 3,3 | 7,5 | 0,21 | 285 | 700 | 180 |
| FM250M2 | 55 | 2950 | 95 | 0,9 | 92,5 | 3,3 | 7 | 0,34 | 360 | 700 | 180 |
| FM280S2 | 75 | 2950 | 129 | 0,9 | 93,5 | 2,2 | 6,8 | 0,62 | 530 | 700 | 180 |
| FM280M2 | 90 | 2960 | 155 | 0,89 | 94 | 2,4 | 7,5 | 0,72 | 570 | 700 | 180 |
| FM315S2 | 110 | 2950 | 186 | 0,91 | 94 | 2,5 | 7 | 1,2 | 760 | 1600 | 180 |
| FM315M2 | 132 | 2960 | 224 | 0,9 | 94,5 | 2,5 | 7,5 | 1,35 | 810 | 1600 | 180 |
| FM315MA2 | 160 | 2975 | 280 | 0,88 | 94,5 | 3 | 8 | 2,1 | 1000 | 1600 | 180 |
| FM315MB2 | 200 | 2980 | 335 | 0,9 | 95,5 | 3 | 8,5 | 2,55 | 1120 | 1600 | 180 |
| FM225S4 | 37 | 1465 | 70 | 0,84 | 91 | 3,8 | 7 | 0,35 | 280 | 700 | 180 |
| FM225M4 | 45 | 1465 | 83 | 0,85 | 92 | 3,8 | 7 | 0,42 | 315 | 700 | 180 |
| FM250M4 | 55 | 1470 | 102 | 0,85 | 92 | 3,3 | 7 | 0,64 | 370 | 700 | 180 |
| FM280S4 | 75 | 1475 | 135 | 0,86 | 93,5 | 2,4 | 7 | 1,2 | 550 | 700 | 180 |
| FM280M4 | 90 | 1475 | 162 | 0,86 | 93,5 | 2,4 | 7 | 1,35 | 590 | 700 | 180 |
| FM315S4 | 110 | 1480 | 196 | 0,86 | 94 | 2,8 | 8 | 2,35 | 790 | 1600 | 180 |
| FM315M4 | 132 | 1480 | 230 | 0,88 | 94 | 2,8 | 8 | 2,7 | 860 | 1600 | 180 |
| FM315MA4 | 160 | 1480 | 275 | 0,89 | 94,5 | 2,3 | 6,8 | 3,6 | 980 | 1600 | 180 |
| FM315MB4 | 200 | 1480 | 345 | 0,88 | 94,5 | 2,6 | 7,5 | 4,4 | 1100 | 1600 | 180 |
| FM225S6 | 26 | 970 | 50 | 0,84 | 89 | 3,3 | 6,3 | 0,47 | 260 | 700 | 180 |
| FM225M6 | 30 | 970 | 56 | 0,86 | 90 | 3,5 | 7 | 0,54 | 280 | 700 | 180 |
| FM250M6 | 37 | 975 | 67 | 0,87 | 91 | 3,5 | 7 | 1 | 360 | 700 | 180 |
| FM280S6 | 45 | 980 | 82 | 0,87 | 91,5 | 2,8 | 6,5 | 1,8 | 540 | 700 | 180 |
| FM280M6 | 55 | 980 | 98 | 0,88 | 92 | 3 | 7 | 2,05 | 580 | 700 | 180 |
| FM315S6 | 75 | 985 | 132 | 0,88 | 93 | 3,5 | 8,5 | 3,6 | 780 | 1600 | 180 |
| FM315M6 | 90 | 985 | 157 | 0,88 | 94 | 3,3 | 7,5 | 4,1 | 850 | 1600 | 180 |
| FM315MA6 | 110 | 985 | 199 | 0,86 | 93 | 3,5 | 8 | 5,5 | 970 | 1600 | 180 |
| FM315MB6 | 132 | 985 | 230 | 0,88 | 94 | 3,5 | 8,5 | 6,7 | 1090 | 1600 | 180 |
| FM225S8 | 18,5 | 730 | 39,5 | 0,76 | 89 | 3,3 | 5,5 | 0,47 | 260 | 700 | 180 |
| FM225M8 | 22 | 730 | 47 | 0,76 | 89 | 3 | 5,3 | 0,54 | 280 | 700 | 180 |
| FM250M8 | 30 | 730 | 62 | 0,78 | 90 | 3,5 | 6 | 1 | 360 | 700 | 180 |
| FM280S8 | 37 | 730 | 74 | 0,79 | 91 | 2,6 | 5,8 | 1,8 | 540 | 700 | 180 |
| FM280M8 | 45 | 730 | 90 | 0,79 | 91,5 | 2,8 | 6 | 2,05 | 580 | 700 | 180 |
| FM315S8 | 55 | 735 | 108 | 0,8 | 92 | 2,8 | 6 | 3,6 | 780 | 1600 | 180 |
| FM315M8 | 75 | 735 | 149 | 0,79 | 92 | 2,8 | 6,3 | 4,1 | 850 | 1600 | 180 |
| FM315MA8 | 90 | 735 | 181 | 0,78 | 92 | 2,8 | 6,3 | 5,5 | 970 | 1600 | 180 |
| FM315MB8 | 110 | 735 | 223 | 0,77 | 92,5 | 3 | 6,8 | 6,7 | 1090 | 1600 | 180 |

For dual speed motors or special powers or windings, please contact TVT

# Overall dimensions





| | 225S | 225M | 250M | 280S | 280M | 315S | 315M |
|---|---|---|---|---|---|---|---|
| A | 140 | 140 | 140 | 140 | 140 | 170 | 170 |
| ØB | 450 | 450 | 550 | 550 | 550 | 660 | 660 |
| ØC | 350 | 350 | 450 | 450 | 450 | 550 | 550 |
| ØD | 60 | 60 | 65 | 75 | 75 | 80 | 80 |
| d | M20 | M20 | M20 | M20 | M20 | M20 | M20 |
| E | 5 | 5 | 5 | 5 | 5 | 6 | 6 |
| F | 18 | 18 | 19 | 20 | 20 | 22 | 22 |
| ØG | 400 | 400 | 500 | 500 | 500 | 600 | 600 |
| ØH | 19 | 19 | 19 | 19 | 19 | 22 | 22 |
| I | 64 | 64 | 69 | 79,5 | 79,5 | 85 | 85 |
| J | 18 | 18 | 18 | 20 | 20 | 22 | 22 |
| L | 1100 | 1125 | 1150 | 1303 | 1303 | 1390 | 1390 |
| L1 | 190 | 190 | 190 | 216 | 216 | 216 | 216 |
| M | 430 | 445 | 480 | 515 | 515 | 589 | 589 |
| N | 375 | 375 | 415 | 450 | 450 | 450 | 450 |
| ØP | 505 | 505 | 540 | 620 | 620 | 620 | 620 |
| ØP1 | 121 | 121 | 121 | 138 | 138 | 138 | 138 |
| R | 310 | 310 | 340 | 380 | 380 | 380 | 380 |
| S | 149 | 149 | 168 | 190 | 190 | 216 | 216 |
| T | 286 | 311 | 349 | 368 | 419 | 406 | 457 |
| V | 356 | 356 | 406 | 457 | 457 | 508 | 508 |
| W | 19 | 19 | 24 | 24 | 24 | 28 | 28 |
| X | 34 | 34 | 36 | 40 | 40 | 46 | 46 |
| Y | 225 | 225 | 250 | 280 | 280 | 315 | 315 |
| Z | PG36 | PG36 | PG42 | PG42 | PG42 | M76X3 | M76X3 |

# Installation and maintenance

Correct installation of the motor and of the mechanical components coupled with it is the indispensable condition for correct motor operation and long life.
The motor should be handled with care, particularly to the shaft.
Before coupling the motor with other mechanical components be sure that all parts interested by the coupling itself have been accurately cleaned and eventually treated with the special products.
The motor should be installed in a position that permits correct ventilation of the same: the air flow should therefore not be hindered; check that flatness and axiality between joints is perfect and always connect the ground wire.
Verify that the electrical system and the section of the cables necessary to supply power to the motor are suitable to the consuption values as indicated on the plate ratings.

COEL motors are designed to reduce the maintenance as much as possible; we suggest, anyway, periodical cleaning of the motor (of its shell as well), particularly when the motor operates in expecially dusty and dirty environments.

The magnetic gap between mobile anchor and electromagnet must be periodically adjusted: it should never overstep the value of 0,5 mm (we suggest a check every 6 months and, at any rate, not over 500.000 brakings

Anyway, installation, inspection and maintenance of the electric motors should be made only by specialized technical staff (for the definition of technical staff see IEC 364, CEI 64-8, EN 60204-1) only when all electrically powered machine parts have been disconnected.
If you don't take the necessary safety, inspection and maintenance measures could cause damages to persons and things.
All COEL motors are supplied with the relevant use and maintenance instruction manual; for any additional technical information contact COEL MOTORI S.r.l.

# Sales Conditions

The COEL motors are sold under the "General Sales Conditions 010707 rev.0", except in case of special sales contracts.

Please contact TVT AMERICA for the complete document of standard sales conditions.

# Since 1976 we generate and stop the motion

"Made in Italy...Loved in America"

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engineering@tvtamerica.com