

Brake motors range

Safety, reliability and breadth of range
0.06 kW to 550 kW
3 to 5000 N.m

LEROY-SOMER[™]

Nidec
All for dreams

A concentrate of experience and know-how

One-stop shop with more than 100 years' experience

Nidec Leroy-Somer has a presence around the world, and proposes a wide range of motors, brakes, gearboxes and drives. With its vast experience and in-house engineering and development resources, Nidec Leroy-Somer is capable of designing drive systems that are increasingly high-performance and efficient, and which meet the requirements of so many applications.

To satisfy, for example, the needs of the materials handling industry, which today requires more productive, more scalable and less energy-intensive systems, Nidec Leroy-Somer offers a broad range of brake motors from 0.06 kW to 550 kW. Their robust, compact and modular design guarantees sure and precise movement, maximum protection for users, and easy integration.

For its know-how, expertise and end-to-end control of its brake motors production line, Nidec Leroy-Somer can guarantee that you get the highest quality levels.

Ranges of brake motors to suit your machines

- **Proven design and configuration adaptable to different motor technologies**
- Brake integration on motors in-plant **making deployment easier** for the user
- **Reliable and robust** construction taking into account the most demanding application requirements
- Mechanical and electrical design based on powerful calculation and simulation tools and **a truly high level of expertise**
- **Suitability for most applications:** system suited to fixed and variable speeds
- **Qualification of all safety components** in accordance with the standards (ISO, EN13135) and the recommendations of the FEM*
- **Operating safety:** control of the braking parameters
- **Systems service life:** compatibility of movement transmission devices
- **Brake motors modularity:** aluminium or cast-iron motors, IP55 or IP23 protection rating, induction technology, and combination with our gearbox ranges

*European materials handling federation

Brake motors

At the core of industry

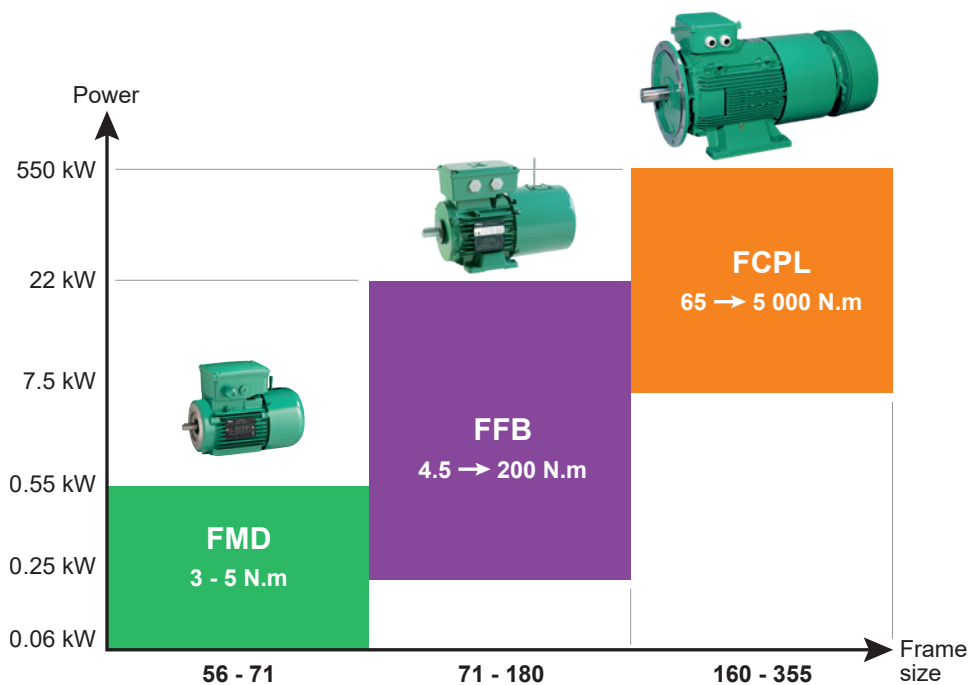
An offering designed to address the widest variety of requirements

Brake motors are an integral part of the drive systems offering from Nidec Leroy-Somer. Brake motors conceived as a single assembly: optimised dimensions of all parts, precision and in-plant testing guaranteeing high reliability.

Available in several variants of configurations and finishes, they address the widest range of industrial requirements.

Whether for constructing machines or equipment, with severe operating constraints or the need for increased productivity, you will find a combination totally suited to your needs.

The breadth of the brake motors range makes it possible to adapt precisely to the different application typologies and covers a wide range of power, torque or voltage specifications.



FMD Brake Motor

A simple and cost-effective model

Satisfying the durability, availability, safety and resistance constraints of applications linked to materials handling is the basis of the FMD brake motor concept.


This motor is easy to deploy, with no adjustments needed, and is reliable and cost-effective.

Benefits of the FMD brake motor

- Compact for ease of integration and installation in your machines
- Reliability based on our IMfinity® motors platform, renowned for its high quality
- Cost-effective
- IP55 protection: effective seal against water splashes
- Dynamic brake
- Suited to variable speed and fixed speed
- FMD booster: rapid brake opening and closing for improved productivity



Main specifications

| Basic standard motor | |
|----------------------|---|
| Frame size | 56 to 71 mm |
| Power | 0.06 to 0.55 kW |
| Polarity | 4 and 6 poles |
| Efficiency class | NIE |
| Mountings | - IEC: B3, B5, B14, B34, B35 - Gearbox integral mounting |
| Protection rating | IP55 |
| Insulation class | F |
| Ambient temperature | -20°C to +40°C |
| Housing | Aluminium |
| Paint finish | RAL 6000 or unpainted |
| Voltage range | 230-380-400-415-460 V three-phase / 220-240 V single-phase |
| Frequency range | 50 or 60 Hz |
| Standards | CE c  US |
| Coils voltage | 180 V or 24 V / DC |
| Maximum speed | 4500 min ⁻¹ |
| Braking torque | 3 and 5 N.m |

Options

- Release lever
- 2nd shaft end
- Encoder and forced ventilation
- PTC and PTO thermal protection
- Booster supply

Main applications

- 1 Automatic barriers
- 2 Chain hoists
- 3 Packaging machines
- 4 Low-capacity overhead cranes
- 5 Industrial door openings



1



2



3



4



5

FFB Brake Motor

A flexible concept

FFB brake motors are built on the IMfinity® motors platform. Thanks to their tried-and-tested design and their flexible configuration, they offer optimum characteristics in terms of reliability, robustness, performance and safety.

Their modularity and wide range makes them ideally suited to all kinds of automation and material handling applications.

Benefits of the FFB brake motor

- Scalable
- Easy to deploy without adjustment and in complete safety
- Precise control of movement and information feedback
- Low inertia for better braking dynamics and speed
- Suited to fixed speed and variable speed
- Operating safety: control of the braking parameters
- Systems longevity: compatibility of movement transmission devices
- FFB booster: rapid brake opening and closing for improved productivity



Main specifications

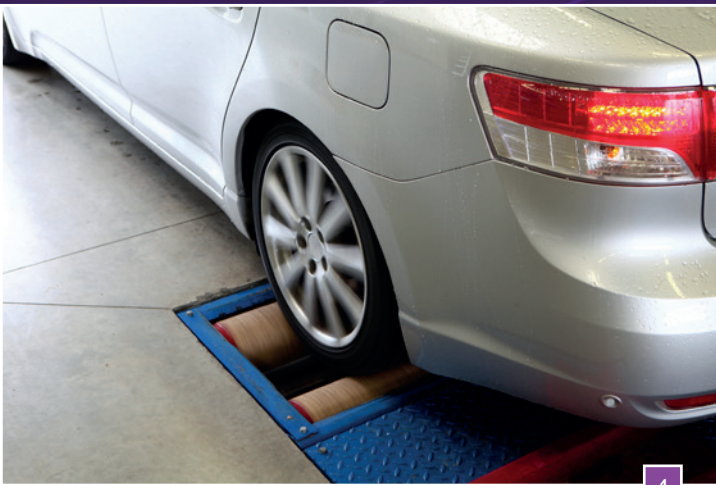
| Basic standard motor | |
|----------------------|--|
| Frame size | 71 to 180 mm |
| Power | 0.25 to 22 kW |
| Polarity | 2, 4, 6 poles |
| Efficiency class | Non-IE, IE3 |
| Mountings | IEC: B3, B5, B14, B34, B35 - Gearbox integral mounting |
| Protection rating | IP55 |
| Insulation class | F |
| Ambient temperature | -20°C to +40°C |
| Thermal protection | PTC as standard from 160 |
| Housing | Aluminium or cast iron |
| Paint finish | RAL 6000 |
| Voltage range | 230-380-400-415-460 V |
| Frequency range | 50 or 60 Hz |
| Standards | CE, UL, C-UL, C-UL-USA |
| Coils voltage | 180 V or 20 V / DC |
| Maximum speed | 4500 min ⁻¹ |
| Braking torque | 4.5 to 200 N.m |

Options

- Auto-return hand brake release (DLRA)
- Brake release lock off (DLM)
- Remote brake release (DMD)
- Encoder and forced axial ventilation
- Booster supply
- Crank shaft socket

Main applications

- 1 Roller conveyors
- 2 Overhead cranes
- 3 Wind turbine movement control
- 4 Braking test benches
- 5 Bulk materials handling



FCPL Brake Motor

A reference for high capacities

Automated handling offers many advantages, such as reduced dimensions, lower construction costs, along with improved productivity and operational safety.


The use of the FCPL brake motor is particularly suited to hoisting and translation and in all situations where braking speed and precision keep downtime due to inertia to a minimum.

Benefits of the FCPL brake motor

- Winding of the brake coil with a twin-component resin: real know-how for better electrical and mechanical protection even in difficult environments
- DC switch-off: improved safety by reducing the brake application response time
- Reduced response time and coil heating with booster (CDF7/10) guaranteeing fast brake release and drop in voltage
- Brakes traceability for enhanced reliability and quality of hoisting machinery
- Motors with wide field-weakening range, 1 to 6 max. for increased productivity
- Windings suited to torque and speed requirements
- Low inertia for better braking dynamics and speed



Main specifications

| Basic standard motor | |
|----------------------|--|
| Frame size | 160 to 355 mm |
| Power | 7.5 to 550 kW |
| Polarity | 4, 6, 8 poles and multi-speed |
| Efficiency class | NIE, IE2, IE3 |
| Mountings | IEC: B3, B5, B14, B34, B35 - Gearbox integral mounting |
| Protection rating | IP55, IP23 |
| Insulation class | F |
| Ambient temperature | -20°C to +40°C |
| Thermal protection | PTC as standard from 160 |
| Housing | Aluminium, cast iron or steel |
| Paint finish | RAL 6000 |
| Voltage range | 230-380-400-415 460 V |
| Frequency range | 50 or 60 Hz |
| Standards | CE  |
| Coils voltage | 20 V, 100 V, 180 V or 207 V / DC |
| Maximum speed | 3600 to 4500 min ⁻¹ according to size |
| Braking torque | 65 to 5000 N.m |

Options

- IP56/66 for marine applications with cast-iron cover
- IP65 excluding ATEX applications
- Internal or specific encoder mounting
- 2nd shaft end possible
- Axial or radial forced ventilation
- Protection: PTO, PTC, PT100, PT1000
- Wear and brake release indicators
- Adjustable air gap
- Release lever
- Stator and brake heaters
- Filter kit at forced ventilation intake (sand, dust)
- Reinforced winding insulation for operation at variable speed
- Mechanical reinforcement of winding (varnish) for harsh atmospheres
- Reinforced encoder for different environmental constraints

Main applications

- 1 Offshore platforms
- 2 Marine winches
- 3 Heavy materials handling
- 4 Hoisting mechanisms for cranes
- 5 Overhead cranes



Wide range of FMD, FFB, FCPL brake motors

Reliability, Safety, Robustness

Robust mechanics

- Parts designed using finite element analysis
- Use of cast-iron foundry parts (end shield, coil, bracket, backplate)
- Machining of cast-iron parts in a single operation (5-axis machine tool) for perfect concentricity
- Careful balancing for reduced noise levels
- Steel cover resistant to the most demanding atmospheres
- Encoder mounting on stainless-steel shaft for easy disassembly
- Special anti-corrosion screws guaranteeing longevity in harsh environments
- Stainless-steel brake springs ensuring long-term performance
- Non-stick, anticorrosion-treated friction materials

Electrical and mechanical safety

- Expert management of the minimum and maximum braking torque (running-in of friction parts) guaranteeing the safety coefficients for sizing the transmission chain
- Failsafe braking (brake engaged in the event of power supply shortage)

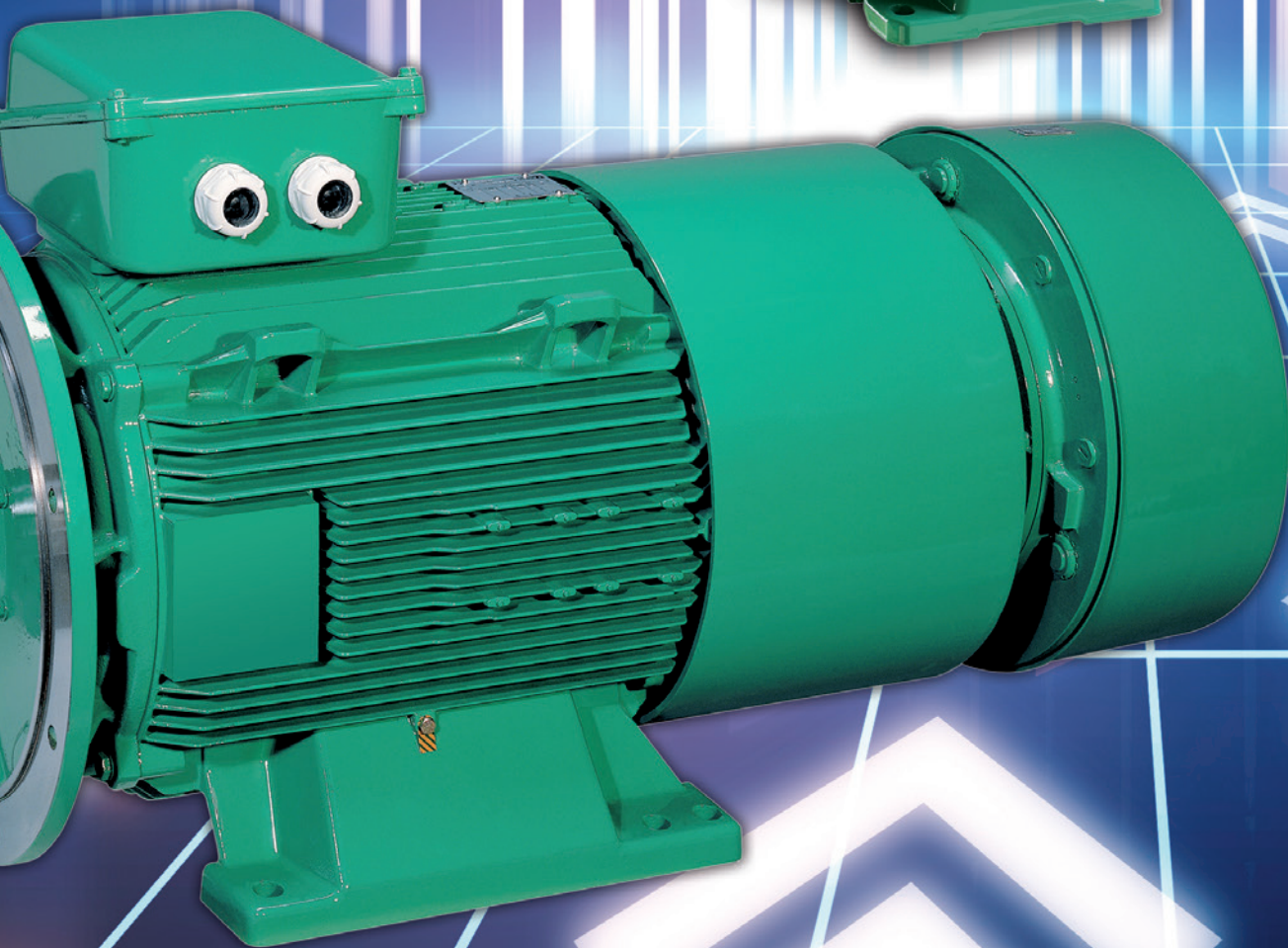
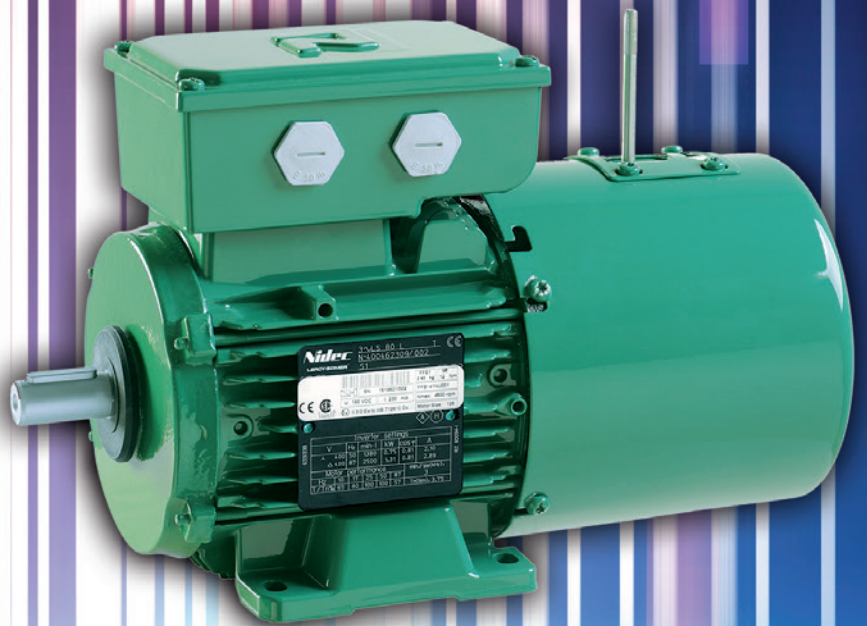
Thermal protection

- PTC sensors included for frame sizes ≥ 160 mm
- Other types of sensor available on short delivery

Motor and brake supervision

- Encoder adaptation
- Wear indicator
- Application / release indicator
- Induction sensor





Brake Motor

Key component in Industry 4.0

The brake motor, as an integral part of all production machines, is a key component in the 4th industrial revolution. Nidec Leroy-Somer is playing its part in this transformation by proposing energy-efficient solutions accompanied by control, surveillance and safety features for your machines.



Brake release sensor: surveillance system for brake status before the motor start-up phase and during operation

Example: in a hoisting system, the motor start-up command will be confirmed by activation of the brake release sensor



Wear sensor: system controlling the wear status of the brake lining

Example: this feature communicates real-time information on the brake status, for preventive maintenance



Electric brake opening and closing command: this allows a system to be reset remotely

Example: on worksite cranes, the slewing movement brake is released remotely so that the jib of the crane is automatically placed in line with the wind direction



Speed and position sensor: this enables movement supervision by providing real-time information remotely

Example: on a gantry crane, the encoder enables the movement speed and position to be controlled and regulated



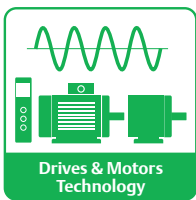
Winding sensors: monitoring and thermal protection of the brake motor

Example: when operating in overload, the motor temperature rise will be detected by the PT100 or PT1000 sensors, enabling the motor and the driven machine to be protected



Energy savings: high-efficiency brake motors and variable-speed control

Example: when conveying bulk materials in continuous service and with variable loads, the IE3 brake motor, or motor controlled by a variable speed drive, will enable the energy consumption to be reduced



Motors and drives technology

Nidec Leroy-Somer proposes a wide-ranging portfolio to meet the different needs of industries and applications

The brake motors, built on the IMfinity® motor platform, offer a wide variety of configurations and versions. They can be perfectly integrated in variable speed systems, associated with our variable speed drives.

Geared motors



Compabloc
up to 14,500 N.m



Orthobloc
up to 23,000 N.m



Manubloc
up to 14,500 N.m

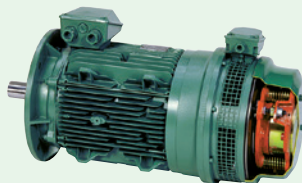
Brake motors



FMD
0.06 to 0.55 kW



FFB
0.25 to 22 kW



FCPL
7.5 to 550 kW

Variable speed drives



Unidrive M / 0.25 to 2.8 MW



Powerdrive MD2
45 kW to 2.8 MW



Commander ID300
Integrated drive
IES2
0.25 kW to 7.5 kW

Induction motors



LS / LSES
Non IE- IE2- IE3
Aluminium IP55
Frame size 56 to 315 mm
2, 4, 6 and 8 poles
0.09 to 200 kW



FLSES
IE2 - IE3 - IE4
IP55 cast iron
Frame size 80 to 450 mm
2, 4, 6 and 8 poles
0.75 to 900 kW



PLSES
IE2 - IE3
IP23
Frame size 225 to 450 mm
2 and 4 poles
55 to 900 kW

Services

Boost and secure your productivity

Express Availability

All our ranges of brake motors benefit from our international supply chain organisation, guaranteeing very short lead times for many combinations. *Express* availability offers fast reaction times to customer needs, thus enabling customers to improve and guarantee their own productivity:

- by benefiting quickly from energy savings
- by helping to ensure continuity of production
- by minimising the stock of spare parts on-site

The *Express* availability offering:

- ready to dispatch in 1 to 10 working days
- motors, servo motors, geared motors, drives, options and accessories
- in limited quantity according to product and option
- access to the list of products eligible for *Express* availability, and the corresponding conditions, directly on our website



Configurator

- The Configurator is a powerful tool for help in selecting motors or geared motors associated with speed drives.
- All standard products are 100%-characterised, with the technical specifications available in 11 languages.
- Product dimensions in 3D
- Real-time information on the eligibility of the product for the *Express* availability offering

Online configurator

Motors & Gears configurator

Current: L27Y Aluminium
 Environment: Common
 Ambience: Non-condense
 Finish: Non-specific
 Zone: Fan-cooled motor
 Method of cooling: General applications
 Application: Single speed
 Number of speed: 1
 Protection type: IP54
 Brake: No

Availability Informations

Express Availability: No
 Manufacturing Lead time commitment: On Request

Motor type

Production: General applications - 400V 50Hz
 Generation code: IP7
 Efficiency class: IE3
 Motor series: L27
 Priority - Speed: L27 3000rpm
 Rated power (kW): 0.75
 Frame size (mm): 63
 Motor winding (V): 230V 300V 400V 415V 460V

Availability Informations

Express Availability: No
 Manufacturing Lead time commitment: On Request

Motor mechanical interface V

Motor type: 2P L27 BE 3 FAN7 230V/300V/400V/415V/460V 50-60
 Facing form: Feet
 Facing flange: M10x1.5MM3
 Operation position: EC STANDARD shaft end - 19x40
 Shaft end type: Standard
 Shaft extend type: Standard
 Second shaft extension: L27 ball bearing
 DC bearing type: LEGEND
 DC bearing mounting: NDE ball bearing
 Greasing type: Greased for life

Availability Informations

Express Availability: No
 Availability flow: No
 Maximum capacity: No
 Manufacturing Lead time commitment: On Request
 Availability flow (working days): No
 Maximum capacity: No

Brake type

Production: 2P L27 BE 3 FAN7 230V/300V/400V/415V/460V 50-60Hz
 Brake series: PFD
 Brake size: PFD1
 Brake treatment: Standard
 Starting torque (Nm): 5.48
 FC brake J type: Standard
 Rated torque (Nm): 2.553
 Brake torque (Nm): 1.538
 Brake supply mode: Incorporated supply AC current
 Resistor: 50A
 Brake voltage: 180V

Availability Informations

Express Availability: No
 Manufacturing Lead time commitment: No

Data sheet

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Data sheet

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Data sheet

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