



# Dynect

Synchronous motors combining reluctance and permanent magnets



High reliability, unrivalled performance  
and interactive commissioning  
11 to 500 kW  
Speeds up to 6000 rpm  
IEC Interchangeable and compact ranges

LEROY-SOMER™

**Nidec**  
All for dreams

# Dyneo+

## Simply the best technology choice

**Industry 4.0** enables the implementation of flexible factories as well as integrating sustainable development. These factories need to be safe and allow energy savings by using smart drive systems.

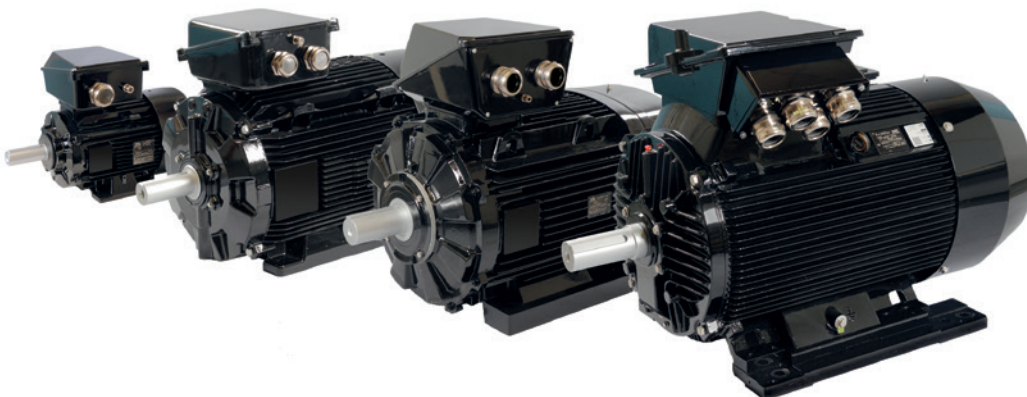
With 15 years of experience and over 3 GW of installed base, Nidec Leroy-Somer is recognized as a leader in offering high energy efficiency synchronous motor and variable speed drive solutions.

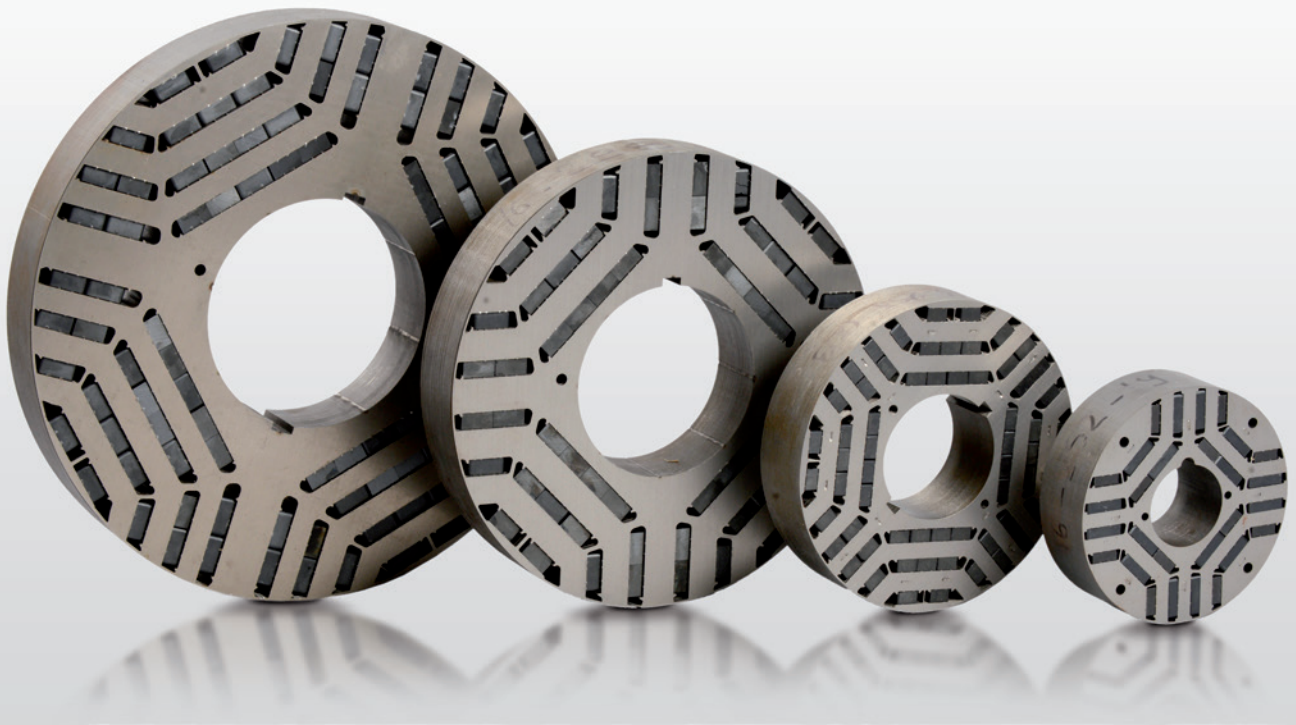
Drawing on its strong expertise, Nidec Leroy-Somer has developed Dyneo+, a new range of super premium efficiency permanent magnet-assisted synchronous reluctance motors.

The range was developed alongside our variable speed drives, optimizing overall performance for operation with or without position feedback while ensuring easy commissioning.

Available from 11 to 500 kW for speeds from 1500 rpm to 6000 rpm, the IEC interchangeable or compact versions meet multiple application requirements.





Based on the mechanical platform of our IMfinity® induction motors, known for their robustness and reliability, the Dyneo+ range is simple to install and set up using new digital tools.





## Dyneo+ motors meet the most demanding market requirements

We have analyzed the major application needs to design a technology that combines the proven performance of permanent magnets with the reliability and simplicity of use of induction motors.

Market requirements	Induction	Synchronous Reluctant Motor SynRM	Permanent Magnet Motor PM (rare earth magnet)	<b>Dyneo+</b> Permanent Magnet assisted Synchronous Reluctant Motor PMASynRM
Design				
Energy gains over the speed cycle and variable loads	=	+	++	++
Compactness	=	+	++	++
Reliability	=	=	=	+
Maintenance	=	+	=	+
Eco-friendly	=	+	=	+
Variable speed drive size gains	=	-	=	=



# An outstanding solution

## Premium energy efficiency

- Energy efficiency level above IE5 reaching the highest efficiency levels of IEC 60034-30-2 and NEMA Super Premium / Ultra-Premium
- Among the lowest Total Cost of Ownership on the market
- Best in class energy saving technology in real use on cycle (variable speed and load)

## High performance

- Torque guaranteed over an extended speed range
- Accurate speed and torque control
- High starting torque in sensorless mode, eliminating the need for an encoder
- Reduced losses, no overheating, resulting in higher motor efficiency

## Easy set-up and maintenance

- Simplicity of assembling / dismantling equivalent to an induction motor
- Reduced maintenance costs: practically zero rotor losses, increased lubrication interval
- Extended service life thanks to bearing serial mounting and limited heating of the motor
- Simplified motor wiring with easy access to the terminal box
- Rapid and easy installation of the high frequency braid

## Optimized motor and drive solution

- Ready-to-use solution: dimensioned to work perfectly together
- Reduced magnetic noise and vibration levels throughout the operating range for better comfort of users

## Robust and reliable

- Winding and bearings insulation adapted to variable speed applications
- Rugged mechanism using the same components as induction motors
- Rare earth free rotor
- As standard, PTC temperature sensor for maximum motor protection and PT1000 sensor for monitoring

# Dyneo+

# Digitalization

## Dyneo+ digitalization for fast and efficient operation

The latest generation of electric motors is an integral part of industry 4.0, contributing to reducing the energy bill and providing more services through digitalization.

The new Dyneo+ synchronous motor, combining reluctance with permanent magnets, is a high-end energy efficiency and ultra-connected solution supported by the Nidec Leroy-Somer Systemiz application.

With direct & instantaneous access to all the necessary information related to the motors, this unique interactive application provides digitalized services, making processes more efficient and simplifying commissioning.

With Systemiz, users can easily achieve optimal performance without any effort or additional cost.

By simply scanning the QR code on the nameplate, the App reveals all relevant Dyneo+ information, such as manuals for commissioning and maintenance or certificates which can be viewed on all devices (PC, tablet and mobile). Interactive configuration and quick setup are just some of the benefits resulting in a real time-saving.

The main functions:

- Exact motor identification by QR code
- Easy access to motor parameters for drive setup
- Access to electrical and mechanical data
- Display of specific motor information:
  - Electronic nameplate
  - Mechanical data
- Direct access to all product literature (brochures, manuals, certificates, etc.)



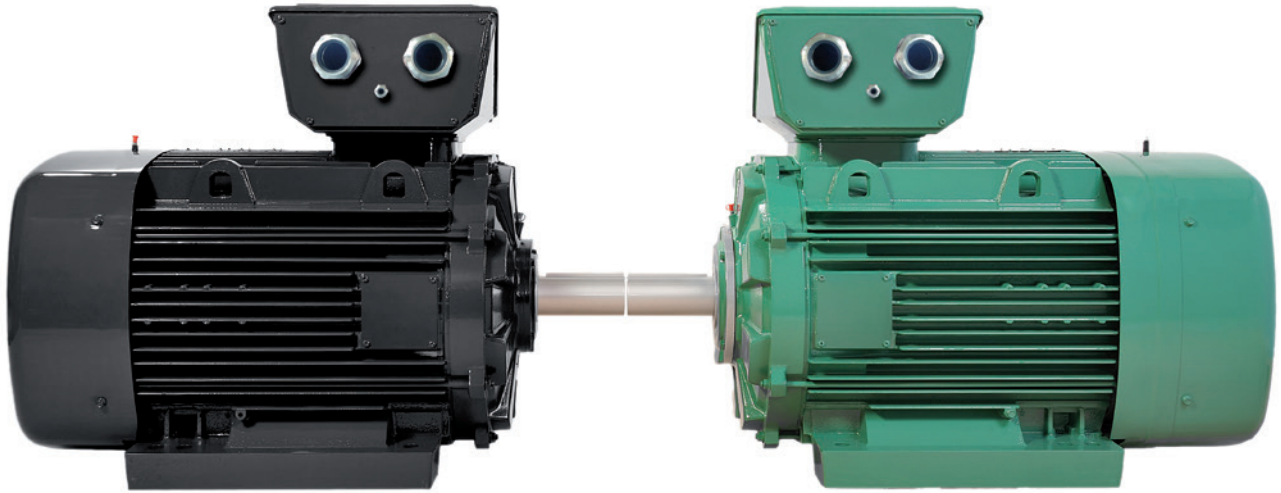


# The benefits of a fully CEl interchangeable range

## 100% interchangeable with 1500 and 3000 rpm induction motors

The interchangeable range can be easily integrated in machines, applications or systems without any modification of the existing design.

- Easy upgrade of the existing installations and perfect fit for standard systems
- Suitable for motor replacement, eliminating the need for mechanical modification
- Benefits immediately from a super premium efficiency system > IE5
- 94% of the components are identical to our proven reliable induction motors (e.g same bearings). The main difference is the rotor with a high power to weight ratio
- Equivalent to IEC mechanical dimensions (standard flanges, shafts and frame sizes)
- Maintenance process equivalent to an induction motor
- Normalized power ratings
- Aluminum or cast iron housing. Heavy cast iron motors reduce vibrations and noise, a real plus for demanding applications such as extrusion
- Speed range: 1500 rpm and 3000 rpm
- Power range: 11 kW to 355 kW



**Dyneo+**

Standard induction motor

1500 rpm		
Power (kW)	<b>Dyneo+</b>	Standard induction IE3 motor
11	LSHRM 160 MR1	LSES 160 M
15	LSHRM 160 LR1	LSES 160 LUR
18.5	LSHRM 180 M1	LSES 180 M
22	LSHRM 180 L1	LSES 180 LUR
30	LSHRM 200 LQ1	LSES 200 LU
37	LSHRM 225 SZ1	LSES 225 SR
45	LSHRM 225 MG	LSES 225 MG
55	LSHRM 250 ME	LSES 250 ME
75	LSHRM 280 SD	LSES 280 SD
90	LSHRM 280 MD*	LSES 280 MD
110	LSHRM 315 SN1*	LSES 315 SP
132	LSHRM 315 MP*	LSES 315 MP
160	LSHRM 315 MP*	LSES 315 MP
200	LSHRM 315 MR*	LSES 315 MR

3000 rpm		
Power (kW)	<b>Dyneo+</b>	Standard induction IE3 motor
11	LSHRM 160 MR1	LSES 160 MP
15	LSHRM 160 MR1	LSES 160 M
18.5	LSHRM 160 LR1	LSES 160 L
22	LSHRM 180 M1	LSES 180 MR
30	LSHRM 200 LQ1	LSES 200 LR
37	LSHRM 200 LQ1	LSES 200 L
45	LSHRM 225 MY1	LSES 225 MR
55	LSHRM 250 ME	LSES 250 MZ
75	LSHRM 280 SC	LSES 280 SC
90	LSHRM 280 MC	LSES 280 MC
110	LSHRM 315 SN1	LSES 315 SN
132	LSHRM 315 MN1	LSES 315 MP
160	LSHRM 315 MN1*	LSES 315 MP
200	LSHRM 315 MN1*	LSES 315 MP

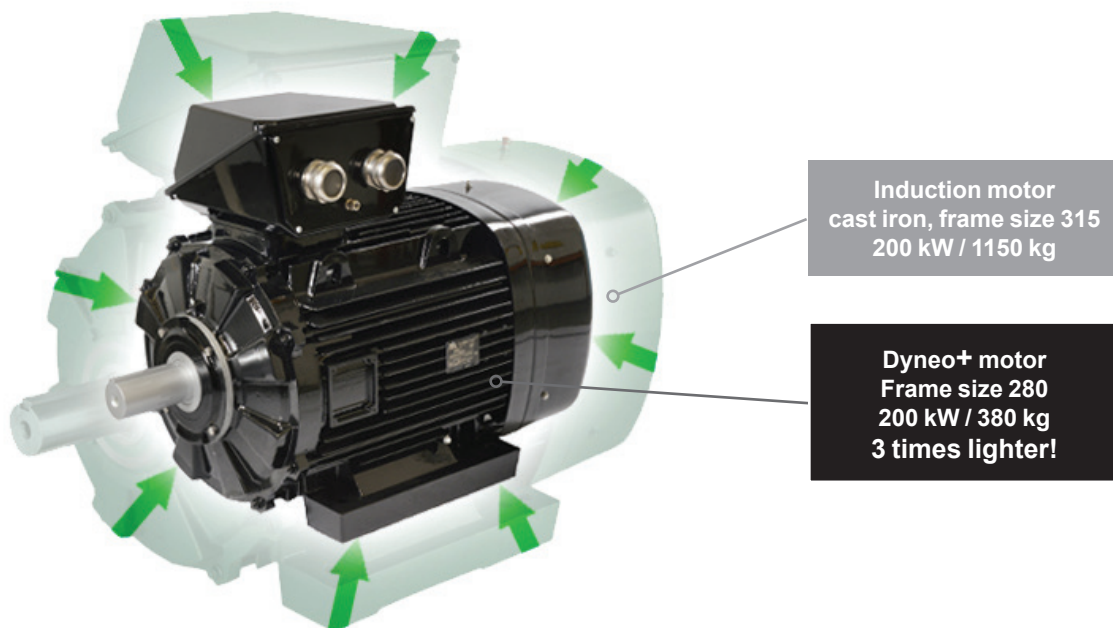
\* insulated bearing NDE & shaft grounding ring

# Dyneo+

## The benefits of a fully compact and light range

### One of the highest power-to-weight ratio on the market

- Reduced size and weight to address any of space constraints
- Easy integration within the customer's machine
- Reduced footprint
- Energy optimization
- Wide power range from 15.5 kW to 500 kW
- Speed range: 1500 / 1800 / 2600 / 3000 / 3600 / 4500 / 6000 rpm
- Aluminium or steel housing
- Perfect fit for system integrators and OEMs





# Dynec+

## More power in a compact size

1500 rpm				
Frame size	Dynec+		Standard induction IE3 motor	
	Power	Weight	Power	Weight
132	15.5	63	7.5	62.6
160	18.5	80	15	100
180	35	152	22	155
200	41	174	30	225
225	94	380	45	318
250	117	480	55	350
280	220	820	90	470
315	240	874	200	820

3000 rpm				
Frame size	Dynec+		Standard induction IE3 motor	
	Power	Weight	Power	Weight
132	32	63	11	62.6
160	37	80	18.5	100
180	64	152	22	105
200	75	174	37	201
225	172	380	45	227
250	206	480	55	234
280	315	820	90	382
315	355	874	200	768

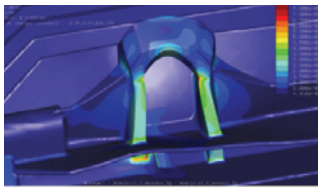
# Dynec+

## The highest standards

### Rugged mechanism

Solid design based on simulations and field tests

- Hardwearing cast iron end shields (included with aluminum motors)
- Machining of complete stator on mandrel to ensure perfect concentricity from magnetic axis of the motor
- Rigorous balancing for a reduced vibration level



### Variable speed adapted bearings

Extended service life and lubrication intervals

- Bearing size and insulation adapted to the machine speed and power



### Certified seal

IP55 sealing system approved by an independent qualified laboratory

- Shaft seal with low energy losses

### Increased bearings life

- Bearings large enough to take heavy shaft loads on the shaft
- High-quality grease for a long service life and longer greasing intervals
- Low rotor temperature rise thanks to synchronous technology



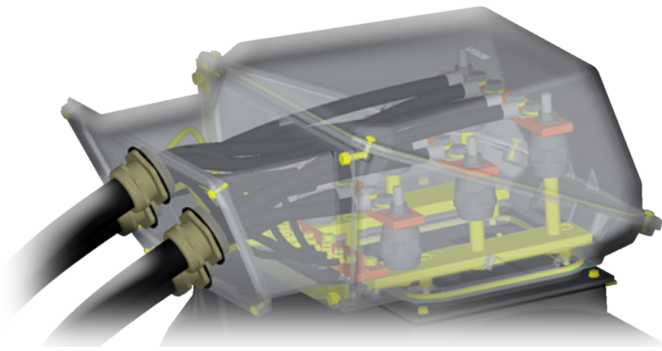
### Rotating components protection (motor and driven load)

- High power motors: grounding ring and insulated bearing (NDE)
- High protection of the motor and driven machine bearings

- Stainless steel screws

## Easy wiring

- Large terminal box for easier access and safer connections
- Ground braids in the terminal box to avoid HF disturbances



## Optimized characteristics

- Designed for optimum compatibility with our drives
- High-performance sensorless mode ensures reliability and ease of installation

## Thermal protection

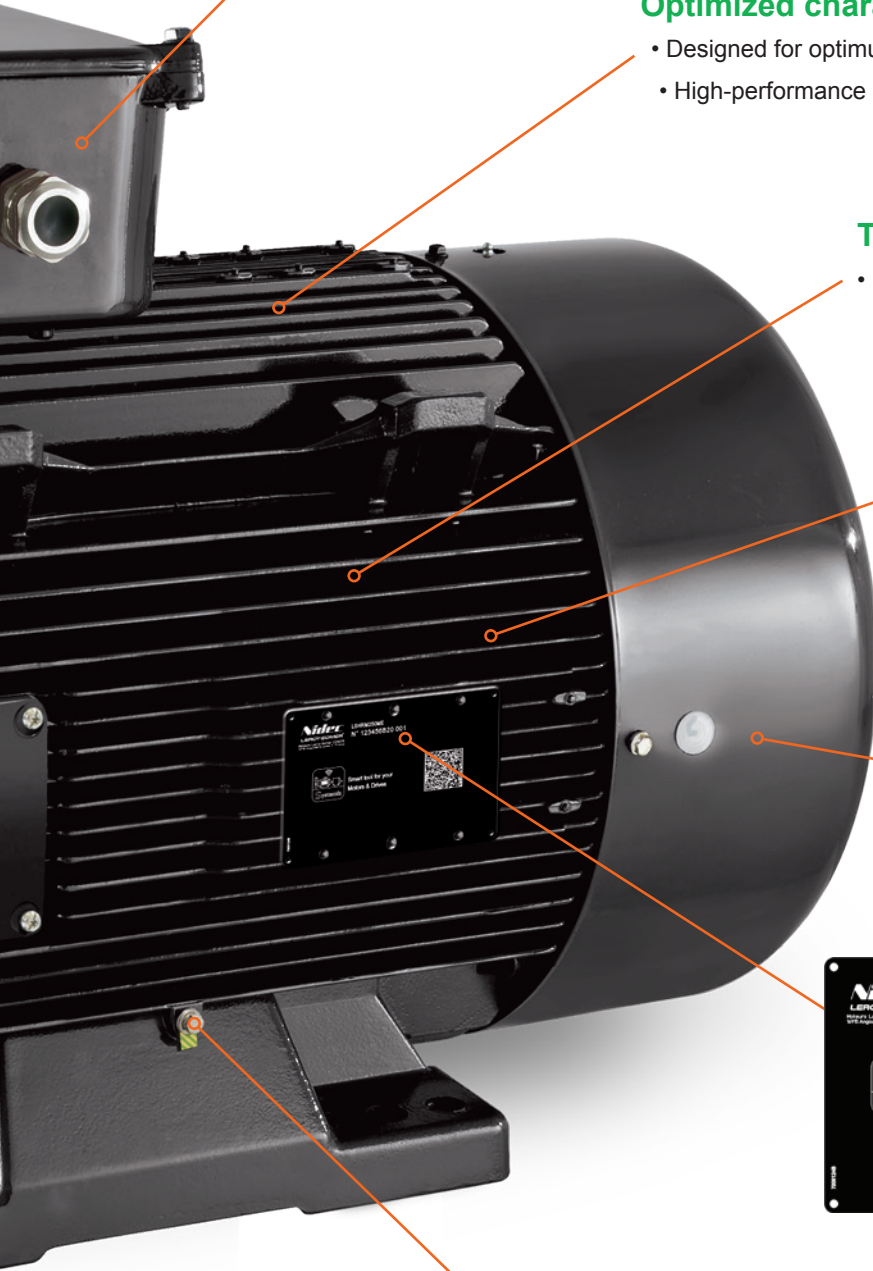
- PTC + PT1000 sensors included

## Electrically robust

- Options dedicated for variable speed use:
  - RIS (Reinforced Insulation System)
  - Insulated bearings
- Impregnation with solvent-free varnish
- Designed > 25 K thermal reserve

## Improved cooling

- Reducing losses
- Minimizing noise



- Connection bar for HF ground braids



- Easy setup via QR code
- Direct access to the documentation

## High-end energy efficiency solutions

### Energy Efficiency

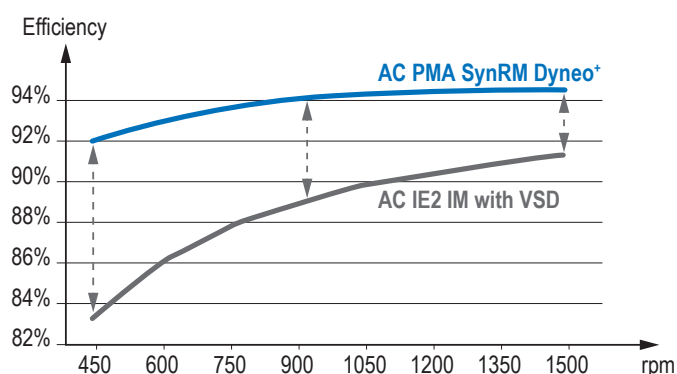
Improving energy efficiency is a must for industries to reduce energy bills and cut greenhouse gas emissions. It also enables compliance with the latest legislation requirements.

Our Dyneo+ range meets IE5 demands, ensuring the highest possible savings over the entire operating range. It is in line with the new IEC 60034-30-2 standard.

IE5 motors have 20% less losses compared with IE4 motors.

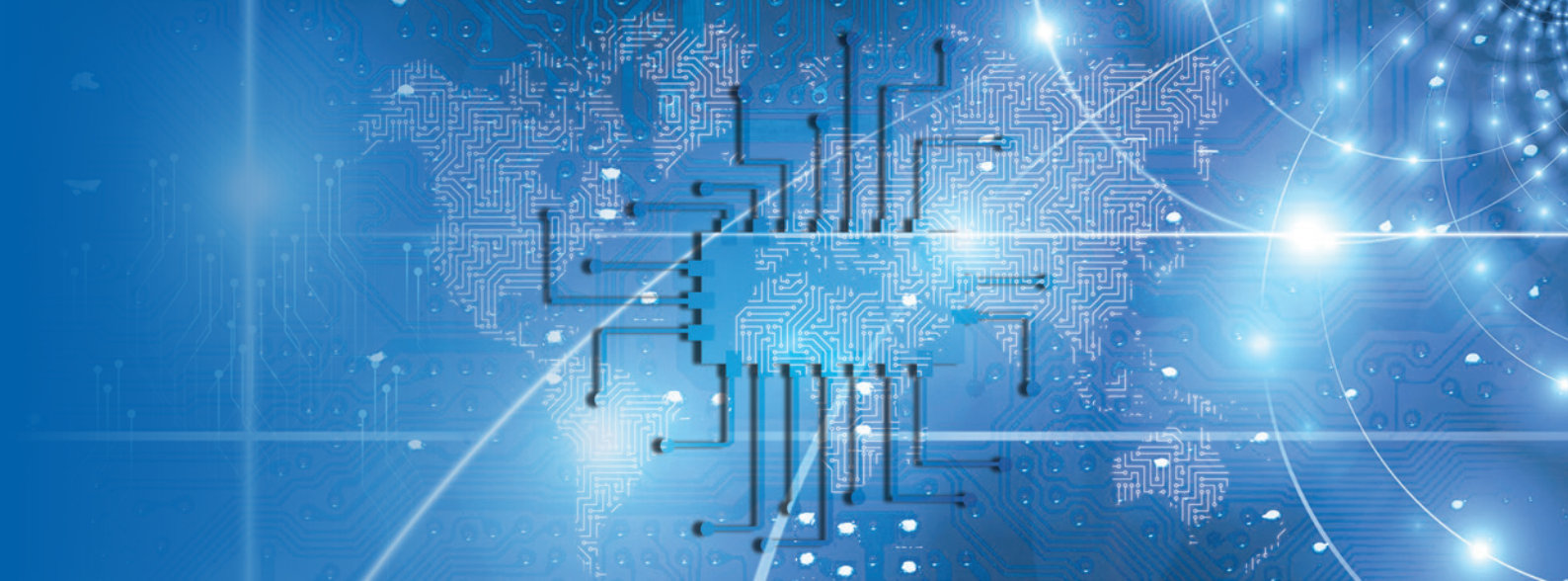
Our Dyneo+ range combined with our variable speed drives help reduce energy consumption even further and improve productivity.

- Outstanding efficiency levels over the whole operating speed range
- Energy savings, reduction in costs of use and installation, improving the TCO (all the direct and indirect costs involved in acquiring and operating the system over its lifetime)
- Quick return on investment compared to conventional induction solutions



### Variable speed operation

- Thermal reserve for maintaining the rated torque over an extended speed range
- Winding insulation and insulated bearings in option for mains voltages  $\geq 510$  V with long cable lengths or frequent operation even during the braking phase
- Forced ventilation unit for availability of the rated torque at very low speeds
- Optional resolver feedback for closed loop
- Standard PTC sensors and PT1000



## Matching drive offer

**Powerdrive MD2 & MD Smart:** Ready-to-use variable speed drives from 45 kW to 500 kW

The Powerdrive MD2 range is suitable for high-power process applications.

It includes compact, rugged, ready-to-use IP21 or IP54 models, in which all the functions required by the application are fitted, wired and tested.

The range is available in a wall-mounted version up to 250 kW or in a free-standing cubicle up to 2.8 MW.

### Simplified, intuitive and interactive Motor-Drive pairing



**Powerdrive F300:** IP20/NEMA1 variable speed drives, to be integrated in a wall-mounted or floor-standing cabinet for ventilation, pumping and compression applications up to 500 kW.

The Powerdrive F300 range offers an excellent level of flexibility and performance.

For closed loop applications the Unidrive M700 ensures high performance on starting torques.

These drives feature sensorless control of the Dyneo+ motors and perform dedicated automation functions as standard.

# Dyneo+

## Focusing on your application needs



In a **refrigeration** plant, energy consumption is by far the highest cost center.

Advantages of our Dyneo+ solution:

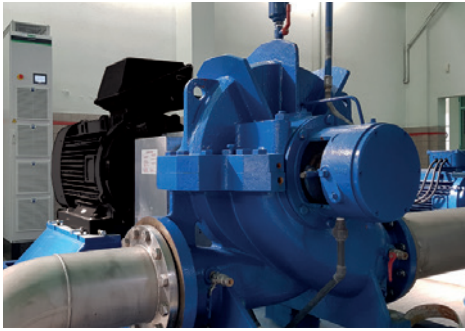
- Huge energy savings potential thanks to its super premium efficiency level
- Eligible for government incentives to support energy efficiency and reduce pollution
- Interchangeable range to fit any existing installations
- High speed 4500 rpm for higher productivity



**Compression** represents one third of the consumption of motorized systems. Whether it is for air or cold production, compressors are subject to a wide variety of demands.

Advantages of our Dyneo+ solution:

- High compactness reducing overall compressor weight and size
- Mechanical adaptability: compact or interchangeable range
- Energy consumption gain with efficiency class higher than IE5
- High performance with constant torque power over a wide speed range and 100% starting torque of the nominal power



In **pumping** applications, the most effective way to enhance process operations and energy efficiency is to introduce variable speed solutions:

Advantages of our Dyneo+ solution:

- Variable speed operation to adapt the flow to speed or pressure (PID regulation)
- Compact range for reduced weight on the pump structure
- Interchangeable range ideal for retrofit with highly performant solutions
- Easy maintenance, assembling/dismantling equivalent to an induction motor
- Contribution to environmental protection thanks to reduced greenhouse gas emissions



**Ventilation** represents almost one fourth of the consumption of motorized systems leading the EU to push towards more energy efficiency regulations, ErP (Energy related Products).

Advantages of our Dyneo+ solution:

- High efficiency compact or interchangeable range
- Variable speed solutions offering secured and performant ventilation flow
- Reduced noise level throughout the operation offering higher comfort
- Speed or pressure flow regulation (PID regulation)
- Suitable for low or high speed ventilation types



**Grinding** is a key operation in the feed industry process and as such must be reliable. The system has to be flexible to deal with different size reduction requirements while delivering the highest product quality and minimizing fines rate to optimize productivity. Energy consumption is a concern because it is a major part of the operational cost.

Advantages of our Dyneo+ solution:

- Reliability provided by a robust design available with aluminium or cast iron housing
- Interchangeable & compact ranges for an optimized selection upon grinder technology
- Flexibility offered by variable speed performances in a self-ventilated design (without additional forced ventilation)
- Highest efficiency level providing significant energy savings over the entire load / speed range
- Various rated speed configurations (from 1500 to 6000 rpm)
- Large choice of mechanical options available (similar to induction motors)
- Low maintenance requirements (long-term bearings lubrication)



**Extrusion** is a continuous process used in industries such as rubber & plastics, food and feed. Screw extruders' energy consumption is significant and key, it is mostly related to the main drive system.

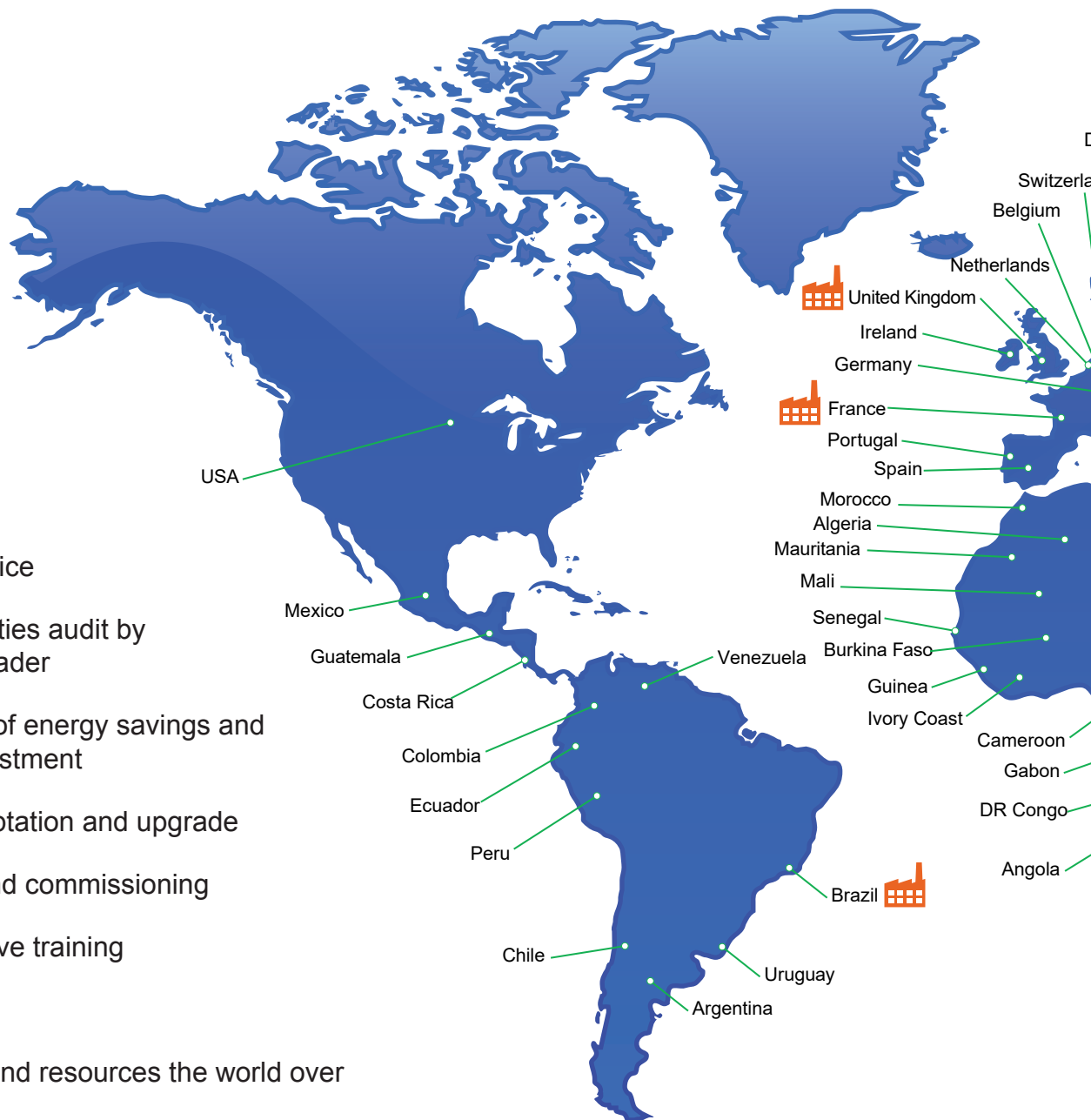
Advantages of our Dyneo+ solution:

- Top efficiency performances over the entire load / speed ranges
- Reliable compact & interchangeable motor ranges available for OEM solution or enduser retrofit
- Variable speed constant torque capabilities without additional forced ventilation
- Low maintenance requirements
- Different rated speed configurations including 1500, 1800 and 2600 rpm series

# Industrial and commercial organization

## Local, permanent and personalised assistance

- Audit and advice
- Installed facilities audit by an industry leader
- Optimization of energy savings and return on investment
- Systems adaptation and upgrade
- Installation and commissioning
- Comprehensive training
- Maintenance
- Installations and resources the world over





## Extensive worldwide presence for the benefit of all our customers

Through our integrated organization and our 7300 employees, our global presence is assured. Our technical assistance services and local services comprise:



### 27 industrial sites

Producing complete ranges of high quality products, optimised for the requirements of specific industries.



### 250 centres of expertise

Offering an excellent customer assistance service for any product, any automation solution or any request for service.



### 8 engineering and design platforms

Developing market-leading products and sets of functionalities using the latest cutting-edge techniques.



### 3 regional dispatch centres

Guaranteeing rapid delivery of our products.

Our vast sales and services networks in Europe, Asia-Pacific, North America and South America are complemented by hundreds of carefully selected distributors and service partners throughout the world.



Note that several countries have more than one of the facilities represented by the icons.

Services are optimized independently for each country. Please contact your local representative for more details of our offer in your country.

## Interchangeable range Technical features

The drives selected below are valid for a switching frequency of 3 kHz, 40° C ambient and ≤ 1000 m altitude

ALUMINIUM / 1500 rpm / 50Hz						
Rated power kW 1500 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 1800 rpm 460V	Rated power kW 2600 rpm 400V 87Hz Δ
11	F300-04400240A10	-	LSHRM 160 MR1	42k6 x 110	12.7	19.1
15	F300-05400380A10	-	LSHRM 160 LR1	42k6 x 110	17.3	26
18.5	F300-06400480A10	-	LSHRM 180 M1	48k6 x 110	21.3	32
22	F300-06400480A10	-	LSHRM 180 L1	48k6 x 110	25.3	38.1
30	F300-06400630A10	-	LSHRM 200 LQ1	55m6 x 110	34.5	52
37	F300-07400790A10	-	LSHRM 225 SZ1	60m6 x 140	42.6	64.1
45	F300-07400940A10	-	LSHRM 225 MG	60m6 x 140	52	77.9
55	F300-07401120A10	60T	LSHRM 250 ME	65m6 x 140	63	95.3
75	F300-08401550A10	75T	LSHRM 280 SD	75m6 x 140	86	129.9
90	F300-08401840A10	100T	LSHRM 280 MD*	75m6 x 140	104	155.9
110	F300-09402210A10	120T	LSHRM 315 SN1*	80m6 x 170	132	192
132	F300-09402660A10	150T	LSHRM 315 MP*	80m6 x 170	152	229
160	F300-10403610E10	180T	LSHRM 315 MP*	80m6 x 170	184	278
200	F300-10404370E10	220T	LSHRM 315 MR*	80m6 x 170	230	-

available soon

\* insulated bearing NDE & shaft grounding ring

<sup>(1)</sup> for power at 1500 rpm / 50Hz

CAST IRON / 1500 rpm / 50Hz						
Rated power kW 1500 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 1800 rpm 460V	Rated power kW 2600 rpm 400V 87Hz Δ
75	F300-08401550A10	75T	FLSHRM 280 SB	75m6 x 140	86	131
90	F300-08401840A10	100T	FLSHRM 280 MD*	75m6 x 140	104	156
110	F300-09402210A10	120T	FLSHRM 315 STB*	80m6 x 170	132	192
132	F300-09402660A10	150T	FLSHRM 315 M*	80m6 x 170	152	229
160	F300-10403610E10	180T	FLSHRM 315 LA*	90m6 x 170	184	278
200	F300-10404370E10	220T	FLSHRM 315 LB*	90m6 x 170	230	-

available soon

\* insulated bearing NDE & shaft grounding ring

<sup>(1)</sup> for power at 1500 rpm / 50Hz

### ALUMINIUM / 3000 rpm / 100Hz

Rated power kW 3000 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 3600 rpm 460V	Rated power kW 5200 rpm 400V 174Hz Δ
11	F300-04400240A10	-	LSHRM 160 MR1	42k6 x 110	12.7	19.1
15	F300-05400380A10	-	LSHRM 160 MR1	42k6 x 110	17.3	26
18.5	F300-06400380A10	-	LSHRM 160 LR1	42k6 x 110	21.3	32
22	F300-06400480A10	-	LSHRM 180 M1	48k6 x 110	26	38
30	F300-06400630A10	-	LSHRM 200 LQ1	55m6 x 110	35	-
37	F300-07400790A10	-	LSHRM 200 LQ1	55m6 x 110	43	-
45	F300-07400940A10	-	LSHRM 225 MY1	55m6 x 110	52	-
55	F300-07401120A10	60T	LSHRM 250 ME	60m6 x 140	64	-
75	F300-08401550A10	75T	LSHRM 280 SC	65m6 x 140	86	-
90	F300-08401840A10	100T	LSHRM 280 MC	65m6 x 140	104	-
110	F300-09402210A10	120T	LSHRM 315 SN1	65m6 x 140	127	-
132	F300-09402660A10	150T	LSHRM 315 MN1	65m6 x 140	152	-
160	F300-10403200E10	180T	LSHRM 315 MN1*	65m6 x 140	184	-
200	F300-10404370E10	220T	LSHRM 315 MN1*	65m6 x 140	233	-

available soon

\* insulated bearing NDE & shaft grounding ring

<sup>(1)</sup> for power at 3000 rpm / 50Hz

### CAST IRON / 3000 rpm / 100Hz

Rated power kW 3000 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 3600 rpm 460V
75	F300-08401550A10	75T	FLSHRM 280 SA	65m6 x 140	86
90	F300-08401840A10	100T	FLSHRM 280 MA	65m6 x 140	108
110	F300-09402210A10	120T	FLSHRM 315 STA	65m6 x 140	127
132	F300-09403200A10	150T	FLSHRM 315 MT	65m6 x 140	152
160	F300-10403200E10	180T	FLSHRM 315 LTA*	70m6 x 140	184
200	F300-10404370E10	220T	FLSHRM 315 LTB*	70m6 x 140	233
250	-	270T	FLSHRM 355 LTA*	80m6 x 170	288
315	-	340T	FLSHRM 355 LTC*	80m6 x 170	363
355	-	400T	FLSHRM 355 LTC*	80m6 x 170	408

available soon

\* insulated bearing NDE & shaft grounding ring

<sup>(1)</sup> for power at 3000 rpm / 50Hz

## Compact range Technical features

The drives selected below are valid for a switching frequency of 3 kHz, 40° C ambient and ≤ 1000 m altitude

ALUMINIUM / 1500 rpm / 50Hz						
Rated power kW 1500 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 1800 rpm 460V	Rated power kW 2600 rpm 400V 87Hz Δ
15.5	F300-06400380A10	-	LSHRM 132 MU1	42k6 x 110	17.8	27
18.5	F300-06400480A10	-	LSHRM 160 LR1	42k6 x 110	21.3	32
35	F300-07400790A10	-	LSHRM 180 L1M	55m6 x 110	40	61
41	F300-07400940A10	-	LSHRM 200 LR1	55m6 x 110	47	71
94	F300-09402210A10	120T	LSHRM 225 MG1M	65m6 x 140	126	-
117	F300-09402660A10	150T	LSHRM 250 MF1*	70m6 x 140	153	-
220	F300-11404870E10	220T	LSHRM 280 MU*	80m6 x 170	253	-
240	-	270T	LSHRM 315 MR*	80m6 x 170	276	-

available soon

\* insulated bearing NDE & shaft grounding ring

<sup>(1)</sup> for power at 1500 rpm / 50Hz

CAST IRON / 1500 rpm / 50Hz						
Rated power kW 1500 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 1800 rpm 460V	Rated power kW 2600 rpm 400V 87Hz Δ
240	F300-11404870E10	270T	FLSHRM315LC	90 x 170	276	-

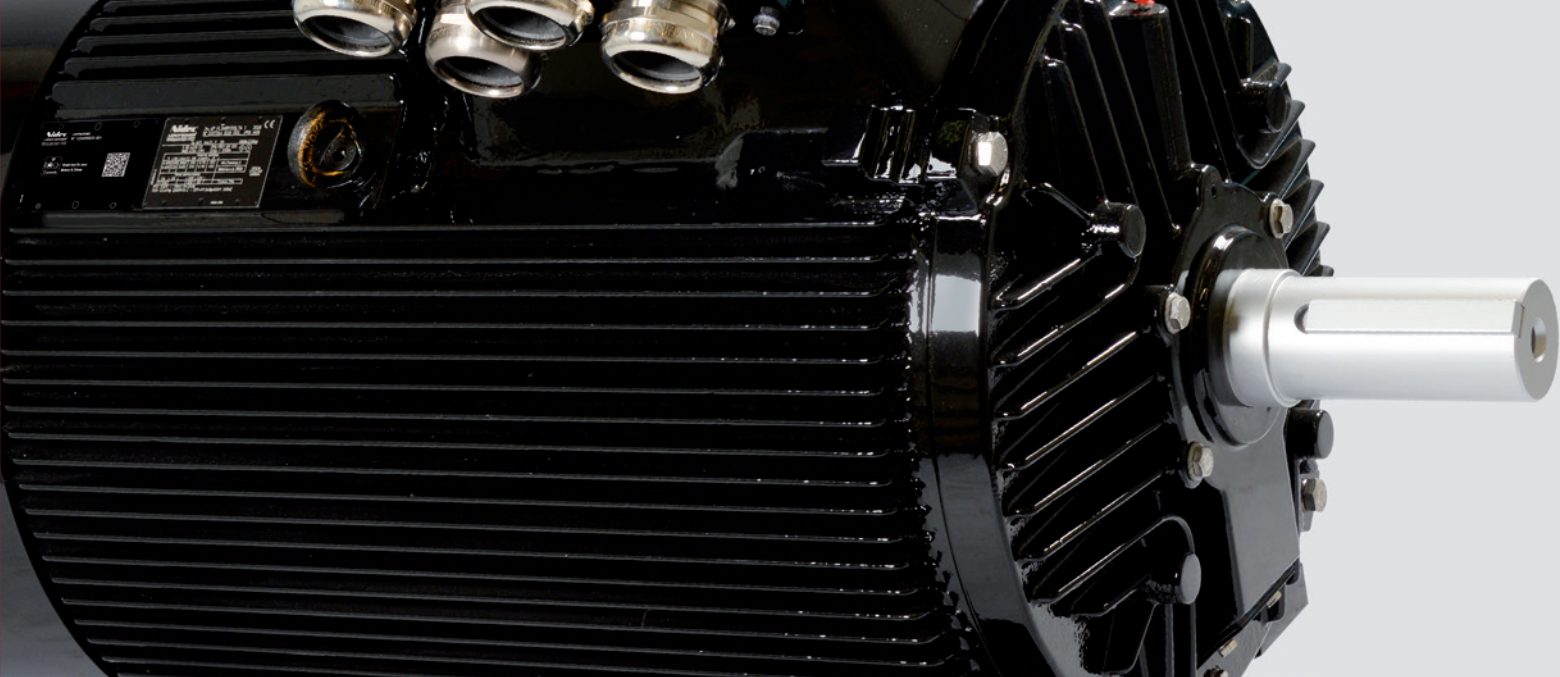
available soon

<sup>(1)</sup> pour des puissances à 1500 min<sup>-1</sup> / 50 Hz

ALUMINIUM / 1800 rpm / 60Hz				
Rated power kW 400V	Powerdrive F300	Powerdrive MD2 & MD Smart	Type	Shaft extensions
19	F300-06400480A10	-	LSHRM 132 MU1	42k6 x 110
22	F300-06400480A10	-	LSHRM 160 LR3	42k6 x 110
42	F300-07400940A10	-	LSHRM 180 L1M	55m6 x 110
50	F300-07401120A10	60T	LSHRM 200 LR1	55m6 x 110
112	F300-09402660A10	150T	LSHRM 225 MG1M	65m6 x 140
138	F300-09403200A10	180T	LSHRM 250 MF1*	70m6 x 140
250	-	270T	LSHRM 280 MU*	80m6 x 170
280	-	340T	LSHRM 315 MR*	80m6 x 170

available soon

\* insulated bearing NDE & shaft grounding ring



### ALUMINIUM & STEEL / 2600 rpm / 87Hz

Rated power kW 400V	Powerdrive F300	Powerdrive MD2 & MD Smart	Type	Shaft extensions
26,8	F300-06400630A10	-	LSHRM 132 MU3	42k6 x 110
32	F300-06400790A10	-	LSHRM 160 LR3	42k6 x 110
60	F300-08401550A10	75T	LSHRM 180 L1M	55m6 x 110
70	F300-08401550A10	75T	LSHRM 200 LR1	55m6 x 110
157	F300-10403610E10	180T	LSHRM 225 MG1M	65m6 x 140
192	F300-11404370E10	220T	LSHRM 250 MF1*	70m6 x 140
305	-	340T	LSHRM 280 MU*	80m6 x 170
330	-	400T	LSHRM 315 MR*	80m6 x 170
380	-	470T	PLSHRM 315 LD*	80m6 x 170

available soon

▪ insulated bearing NDE & shaft grounding ring

\* insulated bearings DE/NDE & shaft grounding ring

### ALUMINIUM & STEEL / 3000 rpm / 100Hz

Rated power kW 3000 rpm 400V	Powerdrive F300 <sup>(1)</sup>	Powerdrive MD2 & MD Smart <sup>(1)</sup>	Type	Shaft extensions	Rated power kW 3600 rpm 460V	Rated power kW 5200 rpm 400V 87Hz Δ
32	F300-06400790A10	-	LSHRM 132 MU3	42k6 x 110	37	56
37	F300-07400790A10	-	LSHRM 160 LR3	42k6 x 110	43	65
64	F300-08401550A10	75T	LSHRM 180 L1M	55m6 x 110	74	-
75	F300-08401840A10	100T	LSHRM 200 LR1	55m6 x 110	86	-
172	F300-10403610E10	220T	LSHRM 225 MG1M	65m6 x 140	198	-
206	F300-11404370E10	220T	LSHRM 250 MF1*	70m6 x 140	248	-
250	F300-11404870E10	270T	LSHRM 315 MP	80m6 x 170	363	-
315	-	400T	LSHRM 280 MU*	80m6 x 170	362	-
315	-	400T	LSHRM 315 MR	80m6 x 140	362.8	-
355	-	400T	LSHRM 315 MR*	80m6 x 170	408	-
430	-	470T	PLSHRM 315 LD*	80m6 x 170	495	-

available soon

▪ insulated bearing NDE & shaft grounding ring

\* insulated bearings DE/NDE & shaft grounding ring

<sup>(1)</sup> for power at 3000 rpm / 50Hz

### ALUMINIUM & STEEL / 3600 rpm / 120Hz

Rated power kW 400V	Powerdrive F300	Powerdrive MD2 & MD Smart	Type	Shaft extensions
38	F300-07400790A10	-	LSHRM 132 MU3	42k6 x 110
40	F300-07400940A10	-	LSHRM 160 LR3	42k6 x 110
75	F300-08401840A10	100T	LSHRM 180 L1M	55m6 x 110
87	F300-08401840A10	100T	LSHRM 200 LR1	55m6 x 110
181	F300-10404370E10	220T	LSHRM 225 MG1M	65m6 x 140
230	-	270T	LSHRM 250 MF1*	70m6 x 140
322	-	340T	LSHRM 280 MU*	80m6 x 170
500	-	600T	PLSHRM 315 LD*	80m6 x 170

available soon

▪ insulated bearing NDE & shaft grounding ring

\* insulated bearings DE/NDE & shaft grounding ring

### ALUMINIUM & STEEL / 4500 rpm / 150Hz

Rated power kW 400V	Powerdrive F300	Powerdrive MD2 & MD Smart	Type	Shaft extensions
48	F300-07401120A10	60T	LSHRM 132 MU3	42k6 x 110
50	F300-07401120A10	60T	LSHRM 160 LR3	42k6 x 110
88	F300-08402210A10	100T	LSHRM 180 L1M	55m6 x 110
88	F300-08402210A10	100T	LSHRM 200 LQ1	55m6 x 110
185	F300-11404370E10	220T	LSHRM 225 MG1M	55m6 x 110
240	F300-11404870E10	270T	LSHRM 250 SF1*	65m6 x 140
260	-	340T	LSHRM 280 MUS*	65m6 x 140
300	-	340T	LSHRM 315 MRS*	65m6 x 140
430	-	470T	PLSHRM 315 LD*	80m6 x 170

available soon

▪ insulated bearing NDE & shaft grounding ring

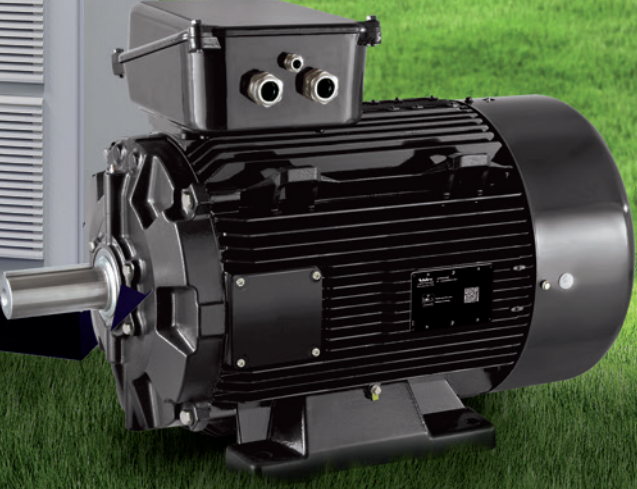
\* insulated bearings DE/NDE & shaft grounding ring

### ALUMINIUM & STEEL / 6000 rpm / 200Hz

Rated power kW 400V	Powerdrive F300	Powerdrive MD2 & MD Smart	Type	Shaft extensions
57	F300-07401550A10	60T	LSHRM 132 MU3	42k6 x 110
65	F300-08401550A10	75T	LSHRM 160 LR3	42k6 x 110
80	F300-08401840A10	100T	LSHRM 180 L1M	55m6 x 110
90	F300-08401840A10	100T	LSHRM 200 LR1	55m6 x 110
185	F300-10404370E10	220T	LSHRM 225 SG1	55m6 x 110
220	F300-11404870E10	270T	LSHRM 250 SF1*	55m6 x 110

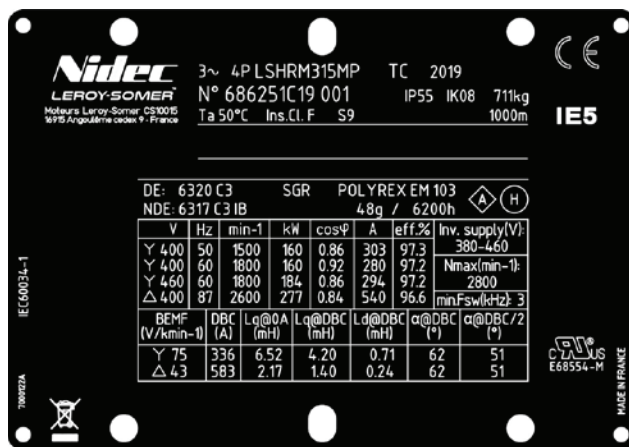
available soon

▪ insulated bearing NDE & shaft grounding ring



## Identification and marking

The nameplate contains all the technical features required for a quick and easy setup



**3 ~**: Three-phase AC motor

**LSHRM**: Series

**315**: Frame size

**MP**: Housing symbol

**TC**: Impregnation index

**2019**: Year of production

**686251**: Serial number

**C**: Month of production

**19**: Year of production

**001**: Motor batch number

**IP55 - IK08**: Degree of protection

**711 kg**: Weight

**Ta 50°C**: Ambient operating temperature

**Ins. cl. F**: Insulation class F

**S9**: Duty - Duty (operating) factor

**1000 m**: Altitude

**IE5**: Efficiency class based on 60034-30-2 standard

**DE**: Drive end bearing

**NDE**: Non drive end bearing (bearing on end opposite the drive)

**SGR**: Shaft grounding ring

**IB**: Insulated bearings

**POLYREX EM103**: Type of grease

**g**: Amount of grease at each regreasing (in g)

**h**: Regreasing interval (in hours)

**A**: Vibration level

**H**: Balancing mode

**V**: Supply voltage

**Hz**: Supply frequency

**min<sup>-1</sup>**: Revolutions per minute (rpm)

**kW**: Rated output power

**Cos φ**: Power factor

**A**: Rated current

**Eff. %**: Efficiency

**Δ**: Delta connection

**Y**: Star connection

**Inv. supply (V)**: Supply voltage

**Nmax (min<sup>-1</sup>)**: Maximum mechanical speed acceptable for the motor

**Min. Fsw (kHz)**: Minimum cut-off frequency acceptable for the motor

**BEMF**: Back electromotive force

**DBC**: Design base current

**Lq@0A**: Q-axis inductance @ low load Lq@DBC : Q-axis inductance @ DBC

**Lq@DBC**: Q-axis Inductance @ DBC

**Ld@DBC**: D-axis Inductance @ DBC

**α@DBC**: Angle of wedging @ DBC

**α@ DBC/2**: Angle of wedging@ DBC/2



## Interactive digital tools for swift services

### Systemiz: an all-in-one application that makes life easier

Systemiz offers a broad range of services supporting our range of smart motors and drives. Settings become simple & intuitive and the access to all related product documentation is instantaneous. A unique time gain!

Our solutions provide you with greater responsiveness, self-diagnostic capabilities and easier integration within your systems.



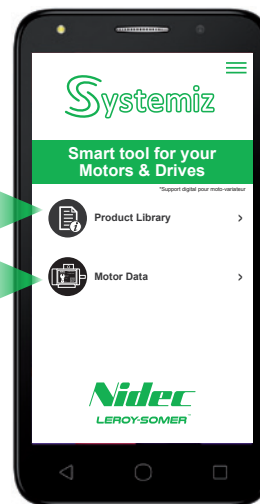
#### Product library

- Enjoy immediate access to all product documentation (brochures, manuals, certificates, etc.)
- Find your nearest contact in just a few clicks
- Share the documentation or save the URL for later use



#### Motor data

- Identify the motor via the QR code on the nameplate
- Choose your motor configuration (coupling) and display the data required to quickly set up your drive
- Print, share or save all your data



### Energy Savings Advisor: Work out your energy savings at the press of a button!

The Energy Savings Advisor mobile app is a simple, accurate, interactive application that allows you to estimate and quickly assess the value of energy savings that can be achieved with our high-efficiency motor and drive solutions.

It allows you to make comparisons with different customized scenario parameters and see a graphic overview of the potential savings for your applications.

You can then receive a complete report showing the breakdown of your simulation and the results obtained by e-mail.

If you wish to go further, send your simulation and your questions directly to our experts via the mobile app. One of them, the preferred contact for your region, will get in touch with you to study your requirement in detail.

Go to [www.nidecautomation.com/esa](http://www.nidecautomation.com/esa) or scan the QR code opposite to access the free application.



# Dynect

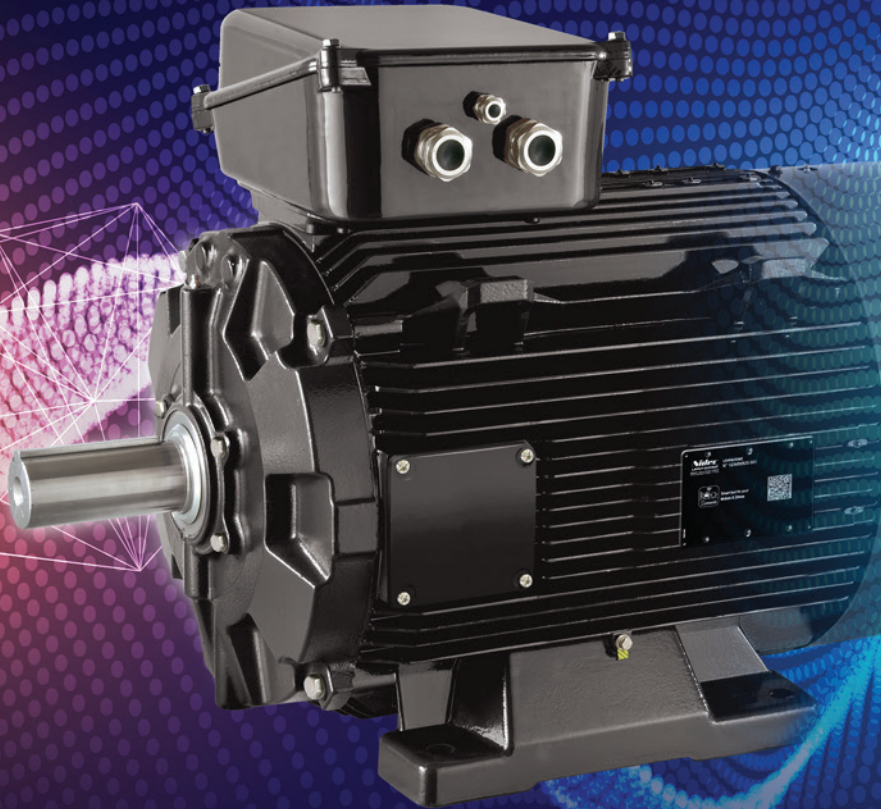
# Make it your own

## Configurator: optimize and make your choice

- An online tool to assist you in the selection of motors, break motors or geared motors combined with variable speed drives.
- All standard products are 100%-characterized, with the technical specifications available in 11 languages.
- Product dimensions supplied in 3D



# Dynect



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