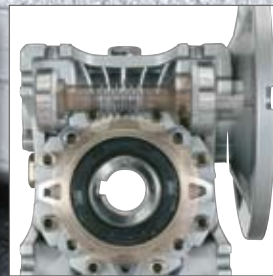


GENERAL CATALOGUE







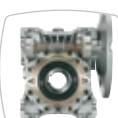




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INDEX

DELPHI	pag. 2-3	
ROBUS 25-60	pag. 4	
ROBUS A	pag. 5	
Technical data	pag. 6	

VARIO	pag. 7	
BOX	pag. 8	
STADIO	pag. 9	
NEO WIFI	pag. 10-11	
Working conditions	pag. 12	

DELPHI

Motive motors are built according to international standard regulations; each size throughout the construction forms is calculated with reference to the tables of standard IEC 72-1.

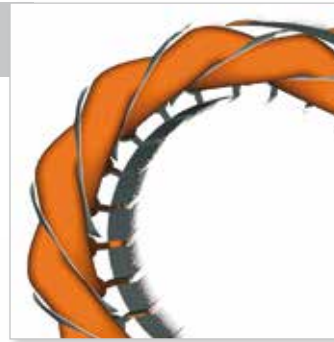
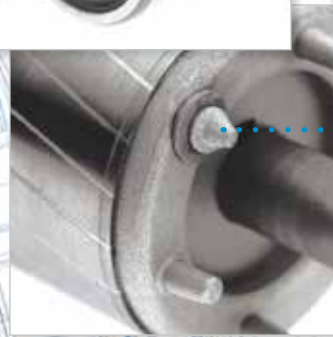
The frame, up to 132 included, is made in die casting aluminium alloy, from size 160 up to 355 the frame is made in cast iron.

All motors are
 multiple voltage
 multi-frequency 50/60Hz,
 F class insulation, (H on request)
 S1 continuous duty service,
 IP55 protection (IP56, 66 and 67 on request)
 IE2 or IE3 efficiency class
 tropicalized winding
 suitable for inverter power supply

IE2, high efficiency class IE 60034-30

IE3, premium efficiency class IE 60034-30

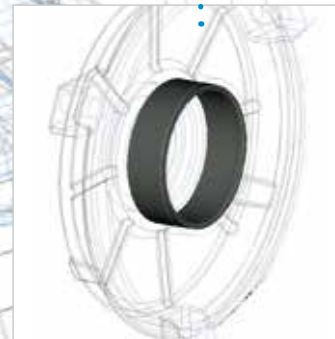
type	of	power
56	aluminum	0,06kW-11kW
63		
71		
80		
90		
100		
112	cast iron	4kW-315kW
132		
160		
180		
200		
225		
250		
280		
315		
355		



The copper is impregnated with a double layer of insulating enamel to ensure high resistance to electrical, thermal and mechanical stress.

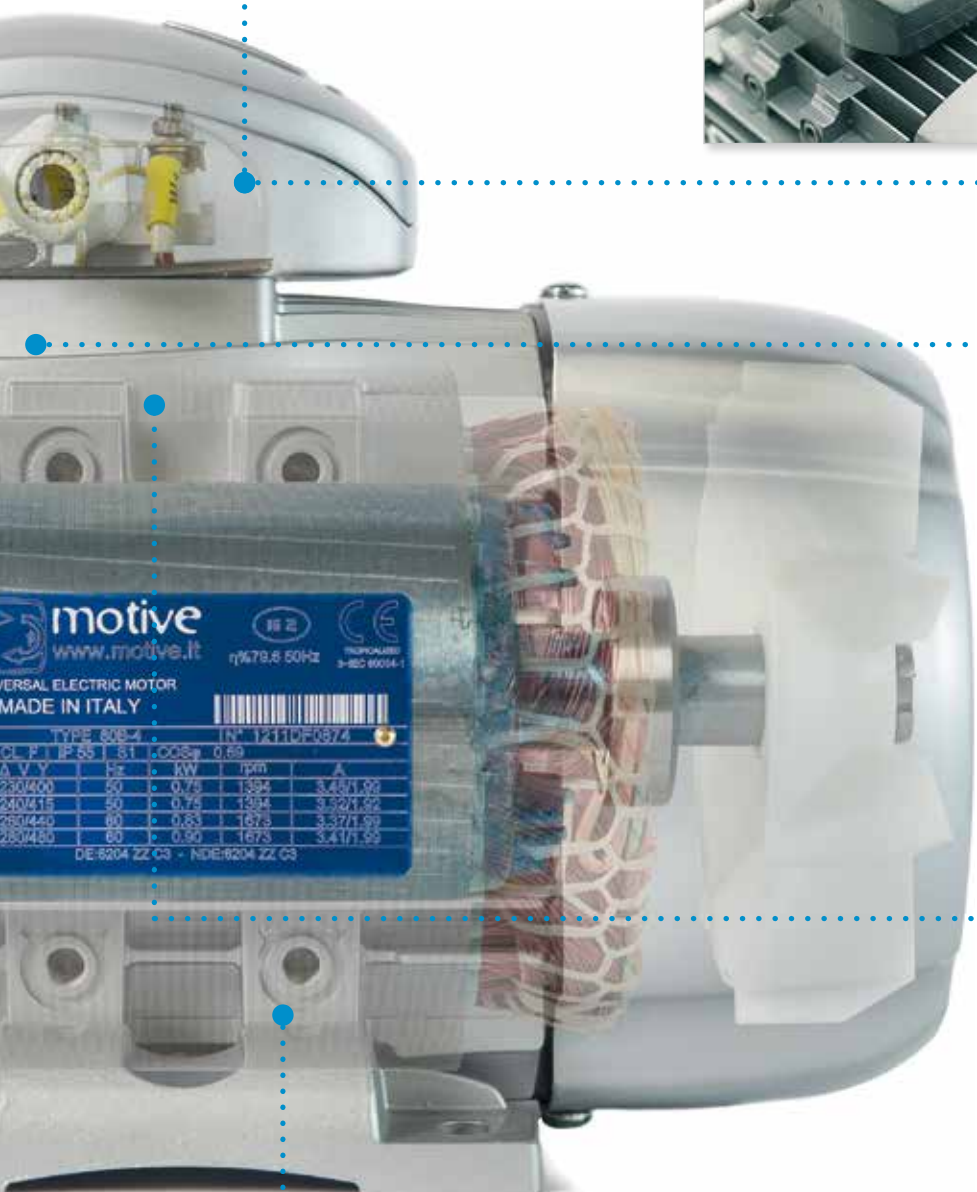
The phases are further isolated by another layer of Nomex film to protect the motors from the voltage peaks that usually occur when the motor is controlled by an inverter.

Bearings selected for their silence and reliability and, for the same objectives, the cage rotor is dynamically balanced.



From type 90, a steel insert is provided in the bearing slot of the aluminum flanges, to resist to radial mechanical forces with a fair degree of security





motive
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UNIVERSAL ELECTRIC MOTOR
MADE IN ITALY

TYPE 80B4 IN° 1X110FCB74

CL F	IP 55	81	cos φ	0.89	
A	V	Hz	kW	rpm	A
230	400	50	0.75	1394	3.480/1.50
230	415	50	0.75	1394	3.520/1.50
250	440	60	0.83	1675	3.370/1.50
250	450	60	0.90	1675	3.410/1.50

DE:8204 ZZ C3 - NDE:8204 ZZ C3



Aiming the maximum protection, the motors are equipped with important details like the pull-resistant cable gland and the combination of bearings with two shields each with rubber seal rings



Cable gland can be easily moved on both the sides of the connection box, thanks to the screw cap



The connection box can be rotated of 360° with steps of 90°

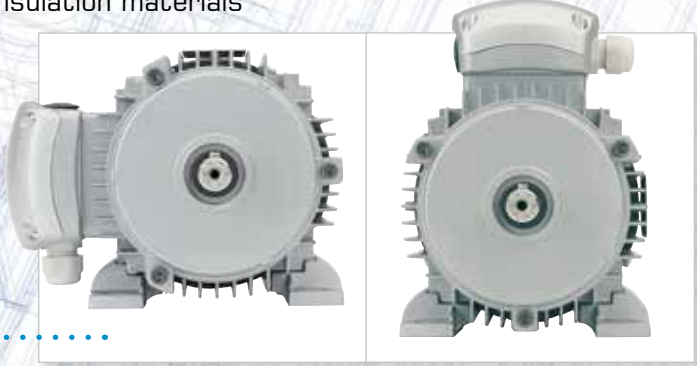


To protect them by the rust, motive motors are painted



Performance excellence is granted by the low loss CRNO "FeV" magnetic laminations adoption, instead then the usual Semi Processed/Decarb "FePO1". FeV laminations provide higher efficiency, lower heating, energy saving and longer life to insulation materials

From size 56 to size 132, feet are detachable, and can be fixed on 3 sides of the housing, thus permitting the terminal box to be positioned up, right or left.



Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.



ROBUST



Easy to examine and maintain.

Minimum maintenance requirement. All sizes are supplied with long-life synthetic oil.



A large top cover in light weight aluminium alloy facilitates the inspection



IEC flange and hollow shaft.

Choice of hollow input flanges permits direct mounting of any standard motor

Modular design with detachable output flange and foot base allows easy and quick conversion between foot and flange mounting



Unique construction of Robus makes it possible to mount any size in any position.

VERSATILE



Various detachable foot bases in solid cast iron make Robus interchangeable with any other gearbox brand



6 interchangeable plugs, including one breather plug and a level plug. Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox

FLEXIBLE MOUNTING

ROBUS-A



Main body of a single piece of aluminum, for an optimal compromise between weight, rigidity and precision



Modular design with detachable output flange and foot base allows easy and quick conversion between foot and flange mounting

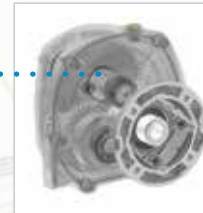


A removable base, with several fixing holes, makes ROBUS-A interchangeable with most of the gearboxes brands



ROBUST

VERSATILE

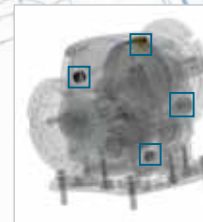


IEC flange and hollow shaft. Choice of hollow input flanges permits direct mounting of any standard motor

Minimum maintenance requirement. All sizes are supplied with long-life synthetic oil.



Unique construction of Robus-A makes it possible to mount any size in any position.

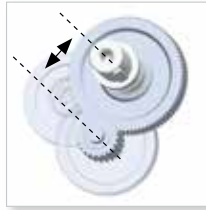


+ 4 interchangeable plugs, including one breather plug and a level plug. Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox

Offered service factor

Which features determine the service factor offered by an helical gearbox?

The service factor of a gearbox is its capacity to withstand operating load and overloads, a certain number of starts, the duration of operating time, and mechanical shocks and vibrations. Thus, higher the service factor, greater is the possibility of trouble-free operation and increased life. Without aiming to be completely exhaustive, we list here the main features that influence the service factor:



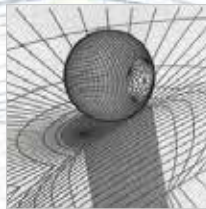
Amongst all parts, the last stage gears are subjected to highest mechanical stresses. Higher centre distance which in turn results in higher module considerably increases the service factor.



The monobloc body of ROBUS provides higher rigidity and mechanical robustness. At the same time, a one-piece body like that of ROBUS-A is more rigid and reliable than a body composed of several parts



Use of high strength steels and case hardening to 58 ± 2 HRC reduce the wear rate in wheels. All wheels are profile ground to Din 3962 class 6 accuracy for low noise and high efficiency.



The surface is exposed to a bombardment of micro-spheres that induces compression and increases further the fatigue resistance.



Shafts are made from 42CrMo4 steel and tempered to reach a hardness of 23-35 HRC, thus increasing their capacity to withstand shearing stresses and torsion effect.



Optimal ratios (between 2 and 6) in the several stages, together with appropriate centre distances, result in higher number of teeth and size (module) of each wheel and better torque transmission fractioning through various stages.



Dual bearing support on the input shaft ensures precise alignment of the first stage gears and reduces vibrations and consequent gear wear



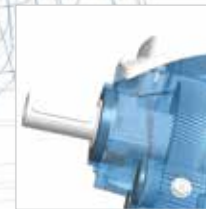
If the intermediate shaft is rigidly supported on both ends, with no overhang wheel, imparts greater flexural strength and smoother meshing



Oversized bearings, allow the gearbox to withstand higher operating loads



Mechanical parts locked in their position by snap rings and spacers. This ensures better absorption of axial thrust and prolongs the life of bearings



Smaller overhang of output shaft from supporting bearing in order to withstand higher radial loads

ROBUS	motor type	max Nm (4 poles)
A2	63-71-80	165
25	63-71-80-90-100-112	350
30	71-80-90-100-112	450
35	71-80-90-100-112	700
40	80-90-100-112-132	1100
50	90-100-112-132-160-180	2500
60	100-112-132-160-180-200	4300

VARIO



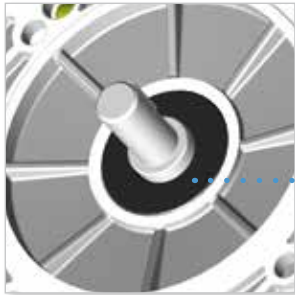
Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.

The new planetary cone disc variators of the patented series VARIO are built in an aluminium die-casted housing in 3 sizes: small, medium and large, respectively for motors of IEC size 63, 71 and 80.



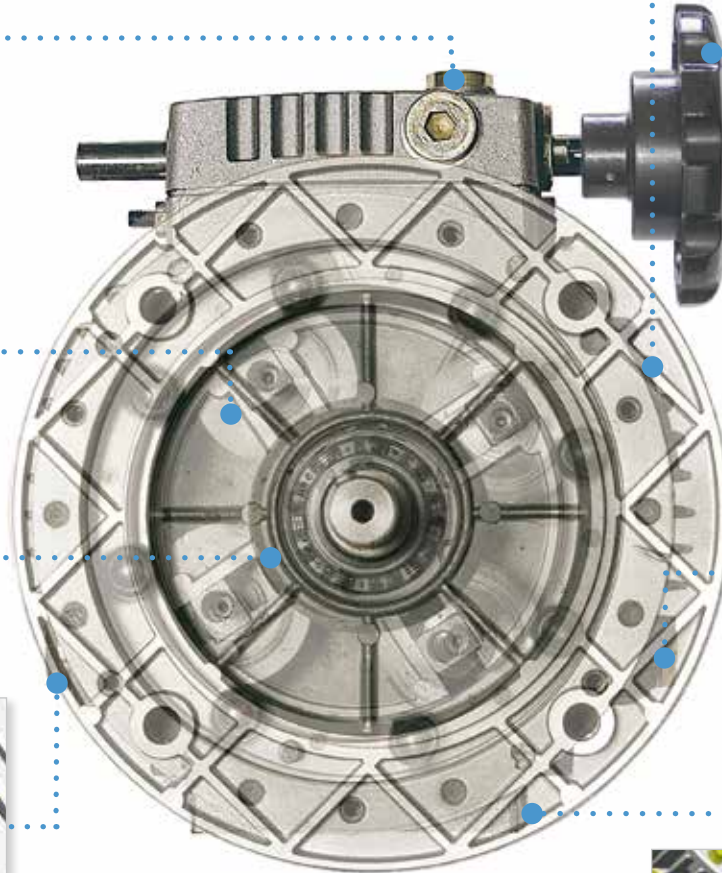
VARIO can operate in both directions, input and output shafts rotate in the same direction. Hand wheel can be fitted to both sides of control box for convenient installation.

Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.

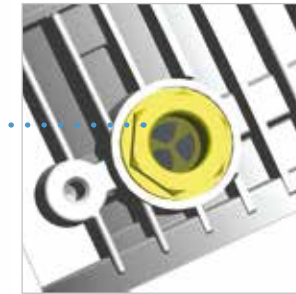


TC double lip oil seals.

A filler plug is magnetic too, in order to maintain clean the lubricant and extend the maintenance intervals.



The oil bath operation provides high efficiency, low noise, vibration free running.



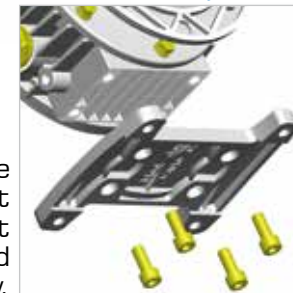
The closed input flange is an integral part of VARIO casing, preventing oil leaks possibilities.



The housing and flanges are blasted and then painted, to cancel the negative effects of the aluminium porosity and protect VARIO from oxidation.

VARIO	motor type	max kW (4 poles)
VARIO-S	63	0,13-0,18
VARIO-M	71	0,25-0,37
VARIO-L	80	0,55-0,75

The standard unit is including the motor B5 flange connection, but it allows to fix the detachable foot too, reducing stock levels and allowing quick delivery.



BOX

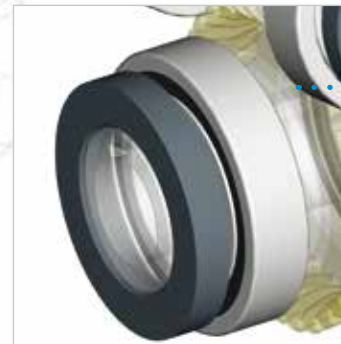
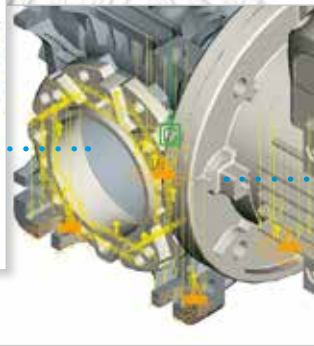
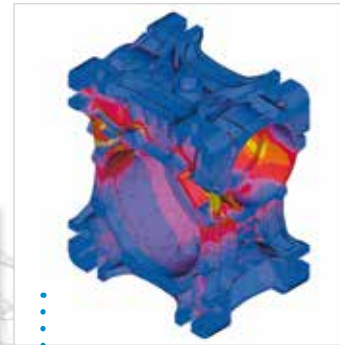
BOX	motor type	max Nm (4 poles)
25	56	13
30	56-63	19
40	63-71	39
50	63-71-80	74
63	71-80-90	135
75	80-90-100-112	205
90	80-90-100-112	360
110	90-100-112-132	675
130	90-100-112-132	850
150	100-112-132-160	1200

From type 75 and up, 2 taper roller bearings are mounted on the wormshaft/wheel.

Moreover, the combination of this characteristic and 2 nilos (mounted on size 75 and up to keep lubrication grease inside the bearings even when they are not touched by the oil bath), permits the mounting of the whole BOX range, from the size 25 to the size 150, in the positions V5 and V6 without any need of additional interventions.

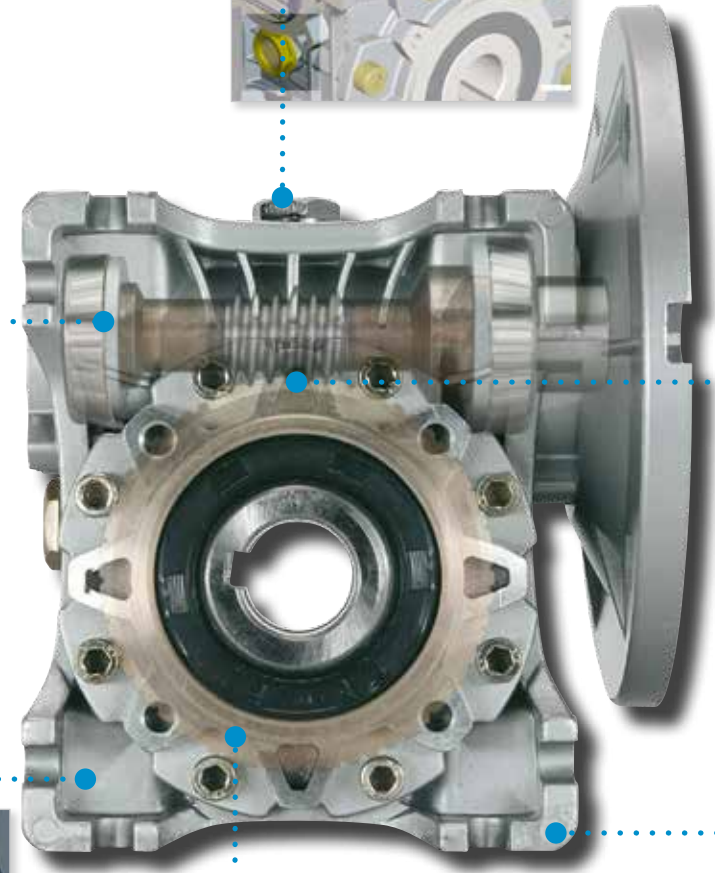
The new patented "BOX" series of worm gear units is made with die-casting aluminium housing from size 25 up to 90, and in cast iron from size 110.

The housing has been designed with parametric three-dimensional CAD SW supported by programs of analysis of the thermal dissipation capacity and the structural resistance/deformation.



Lubrication is already provided by motive with long-life synthetic oil up to size BOX90, and with mineral oil from size BOX110.

The gear unit is equipped with a full set of filler, level and breather plugs, permitting all mounting positions and facilitating the management of the stock.



Mounting positions B6 or B7 are also permitted on all the BOX series, thanks to the adoption of 2RS auto-lubricated bearings on the output gear.

In conclusion, the whole BOX series can be mounted in any position with no need of specifications in the order.

An epoxy paint coat cancels the negative effects of the aluminium porosity and protects the housing from oxidation.



In order to increase silence, efficiency and duration, the wormshaft is made in case hardened steel and ground machined, while the worm wheel is in shell cast ZCuSn12 bronze.

2 safety plastic covers on the output are always provided to protect BOX during transportation and storage, and then the user from accidental contacts with moving parts



Mating surfaces are machined for a perfect planarity.

STADIO

Design features

STADIO construction is modular and therefore it can be supplied as a separate unit to be mounted on any type of fitted geared motor (PAM).

It is not requested any part pre-mounting on the motor shaft.

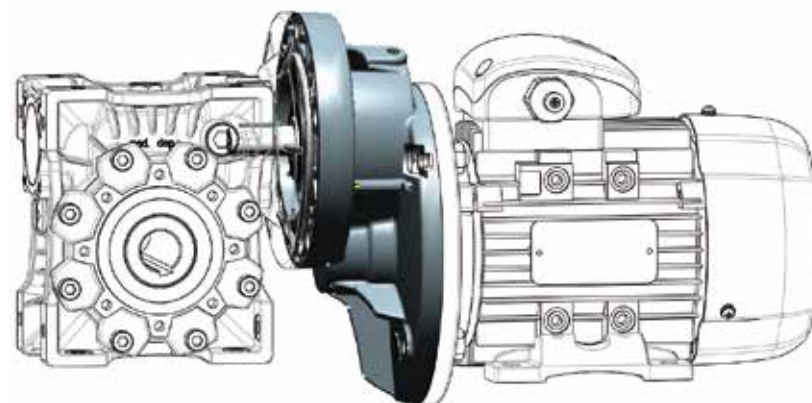
Like all connectable motive motors and gearboxes, STADIO is supplied by Motive with synthetic oil suitable for the whole lifetime. No maintenance requested.

Like all connectable gearboxes and motors manufactured by Motive, the whole STADIO range can be mounted in any position with no need of specifications in the order.

The pre-stage unit cannot be used by itself, but only coupled with another reduction unit.

A powder paint coat cancels the negative effects of the aluminium porosity and protects the housing from oxidation.

In order to increase silence, efficiency and duration, gears are made in case hardened (HRC59-63) tempered steel 20CrMnTi (UNI7846) accurately ground on the involute.



	motor flange
STADIO-63	63B5
STADIO-71	71B5
STADIO-80	80B5
STADIO-90	90B5

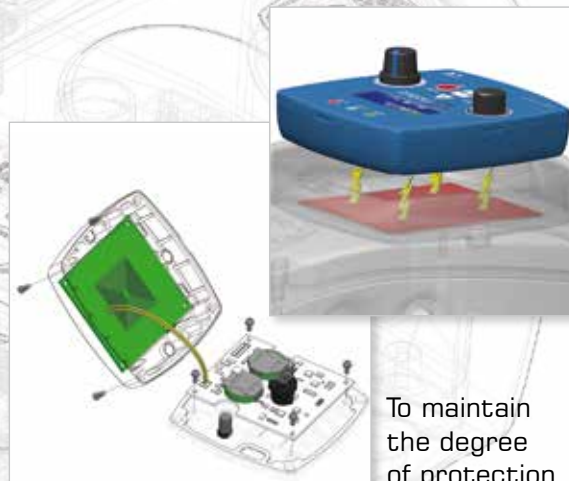
NEO WIFI

The purpose of an integrated motor-inverter is to save time and reduce costs in the study, installation, wiring, programming and testing of the motor + inverter system, as well as the dangers due to errors associated with these operations. However, before the NEO-WiFi, there were factors that limited the availability of motor-inverters: the degree of protection that was needed (motors can be installed out in the open, while inverters could not) and the fact that the motor-inverter, and therefore its keypad, remain removed from whoever is commanding it (imagine, for example, a ventilator that is on a roof). Motive has solved both problems with NEO-WiFi, patented, easy to use, IP65, with removable control panel, remotable wireless, powered by induction when placed in its housing on the motor or by lithium rechargeable batteries. While possessing the most advanced features of the other inverters, NEO-WiFi, thanks to its innovative solutions, is designed as a competitive and user-friendly turnkey integrated system, with all parts, motor, inverter and control designed for outdoor use, and with standard remote control. The manufacturers of pumps, fans, and other machines can thus offer a finished "plug-in" product, without delegating risky and costly installations to their customers. Their customers need only to insert the plug, wherever it is installed, and decide if they want to bring the keypad with them.



Programming and control, that is also remote and wireless. A drastic reduction of installation costs.

A keypad can control simultaneously, or separately, up to 8 motors.



To maintain the degree of protection and eliminate fragile and complicated connectors, the keypad is automatically powered by induction when the panel is housed in the lid of the NEO, or, when remote controlled, it is automatically powered by rechargeable batteries that are provided standard, or by BLOCK.



High degree of protection, against dust and water, for outdoor use.



Modbus



The keypad can be positioned or removed from its seat without any tools, because it adheres to it with 4 magnets.





Rotatable keypad.



The keypad is available in two versions: with or without analogue controls.



Incorporated filters of NEO-WiFi-11 and NEO-WiFi-22 make them suitable for industrial environment EMC. NEO-WiFi-3 EMC is compatible not just with Industrial environment, but also light industrial, commercial and residential environments.

The keypad can be fixed to a metal wall with its magnets or to a concrete wall using inserts.

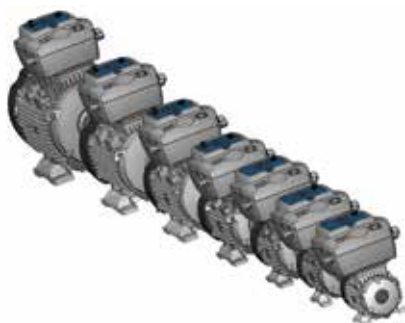


Any NEO can be fixed to a wide range of motors of different power and size.



Equipped with PC interface SW for event analysis.





Power range of motors that can be connected (at 400Vac)

motor-kW	0,25	0,37	0,55	0,75	1,1	1,5	1,9	2,2	3	4	5	5,5	7,5	9,2	11	15	18,5	22	
NEO-WiFi-3kW																			
NEO-WiFi-11kW																			
NEO-WiFi-22kW																			

Size range of IEC motors that can be connected

motor-IEC type	71	80	90	100	112	132	160	180
NEO-WiFi-3kW								
NEO-WiFi-11kW								
NEO-WiFi-22kW								



Physical quantity	Symbol	UOM	NEO-WiFi-3kW	NEO-WiFi-11kW	NEO-WiFi-22kW
Inverter protection degree	IP		IP65		
Inverter supply voltage	V_{1n}	V	3x 200-460		
Inverter supply frequency	f_{1n}	Hz	50-60		
Inverter output frequency	f_2	Hz	200% f_{1n} [f_2 0-100Hz with f_{1n} 50Hz]		
Rated output current from the inverter (to the motor)	I_{2n}	A	7.0	22	45
Maximum Starting torque / Rated torque ratio	Cs/Cn	Nm	150%	200% (7,5kW) 160% (11kW)	150%
Maximum Starting current (kept for 3 seconds)	I_{2max}	A	150% I_2	200% I_2 (7,5kW) 160% I_2 (11kW)	150% ($I_{2n} + 5%$)
Maximum WiFi keypad-inverter communication distance out in the open		mt	20		



Further characteristics	NEO-WiFi-3kW	NEO-WiFi-11kW	NEO-WiFi-22kW
Motor control	V/F	vectorial	vectorial
Synchronous motors control	NO	optional	optional
Programmer with built-in clock and battery (to make it possible to plan starts and stops)	NO	YES	YES
EMC for INDUSTRIAL ENVIRONMENT (ref. EN 50081-2, para 5)	YES	YES Class A - Cat C2	YES Class A - Cat C2
EMC for DOMESTIC, COMMERCIAL AND LIGHT INDUSTRIAL ENVIRONMENT (ref. EN 50081-1, para 5)	YES Class A - Cat C1	optional	optional
3PH power knife switch	optional	optional	optional
Communication Protocol (from October 2014)	MODBUS	MODBUS	MODBUS
Internal braking resistances	YES	YES	YES

TERMS OF SALE AND GUARANTEE

ARTICLE 1 GUARANTEE

1.1 Barring written agreements, entered into between the parties hereto each time, Motive hereby guarantees compliance with specific agreements.

The guarantee for defects shall be restricted to product defects following design, materials or manufacturing defects leading back to Motive.

The guarantee shall not include:

- * Faults or damages ensuing from transport. Faults or damages ensuing from installation defects; incompetent use of the product, or any other unsuitable use.
- * Tampering or damages ensuing from use by non-authorized staff and/or use of non-original parts and/or spare parts;
- * Defects and/or damages ensuing from chemical agents and/or atmospheric phenomena (e.g. burnt out material, etc.); routine maintenance and required action or checks;
- * Products lacking a plate or having a tempered plate.

1.2 Returns to credit or replace will be accepted only in exceptional cases; however returns of goods already used to credit or replace won't be accepted in any case.

The guarantee shall be effective for all Motive products, with a term of validity of 12 months, starting from the date of shipment.

The guarantee shall be subject to specific written request for Motive to take action, according to statements, as described at

the paragraphs herein below. By virtue of aforesaid approval, and as regards the claim, Motive shall be bound at its discretion, and within a reasonable time-limit, to alternatively take the following actions:

- a) To supply the Buyer with products of the same type and quality as those having proven defective and not complying with agreements, free ex-works; in aforesaid case, Motive shall have the right to request, at Buyer's charge, early return of defective goods, which shall become Motive's property;
- b) To repair, at its charge, the defective product or to modify the product which does not comply with agreements, by performing aforesaid action at its facilities; in aforesaid cases, all costs regarding product transport shall be sustained by the Buyer.
- c) To send spare parts free of charge: all costs regarding product transport shall be sustained by the Buyer.

1.3. The guarantee herein shall assimilate and replace legal guarantees for defects and discrepancies, and shall exclude any other eventual Motive liability, however caused by supplied products; in particular, the Buyer shall have no right to submit any further claims.

Motive shall not be liable for the enforcement of any further claims, as of the date the guarantee's term of validity expires.

ARTICLE 2 CLAIMS

2.1. Claims, regarding quantity, weight, gross weight and colour, or claims regarding faults and defects in quality or compliance, and which the Buyer may discover on goods delivery, shall be submitted by a max. 7 days of aforesaid discovery, under penalty of nullity.

ARTICLE 3 DELIVERY

3.1. Any liability for damages ensuing from total or partial delayed or failed delivery, shall be excluded.

3.2. Unless differently communicated by written to the Client, the transport terms have to be intended ex-works.

ARTICLE 4 PAYMENT

4.1. Any delayed or irregular payments shall entitle Motive to cancel ongoing agreement, including agreements which do not regard the payments at issue, as well as entitling Motive to claim damages, if any. Motive shall, however, have the right, as of payment's due date and without placing in arrears, to claim interest for arrears, to the extent of the discount rate in force in Italy, increased by 12 points. Motive shall also have the right to withhold material under repair for replacement. In the case of failed payment, Motive shall have the right to cancel all guarantees of materials, as regards the insolvent Client.

4.2. The Buyer shall be bound to complete payment, including cases whereby claims or disputes are underway.

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