drivon®

NEW HEART OF ELECTRIC MOTION

MOTOVARIO®

HEART OF MOTION

50° 1965-2015

1 WHO WE ARE: EVOLUTION

1966	FIRST MECHANICAL VARIATOR
1987	FIRST WORM GEAR REDUCER
1988	FIRST HELICAL GEAR REDUCER AND FIRST HELICAL BEVEL GEAR REDUCER
1992	EVOLUTION OF THE WORM GEAR REDUCER: NMRV
1999	TECHNOLOGICAL EVOLUTION OF THE GEAR REDUCERS - HBS SERIES
2010	EVOLUTION OF THE WORM GEAR REDUCER: NMRV POWER
2013	NEW WORM GEAR REDUCERS FOR AGGRESSIVE ENVIRONMENTS
2014	DRIVON: NEW HEART OF ELECTRIC MOTION

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2 INTRODUCTION

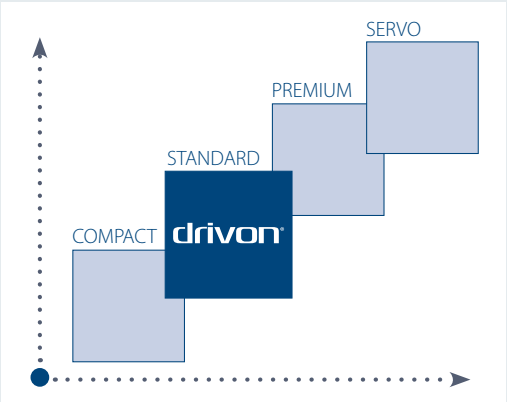
Drivon, designed to be used in different types of applications (especially pumps, fans and conveyor belts) consists of extremely reliable components and is controlled by our software that provides excellent performance with special attention to the system energy efficiency. Its Vectorial Control, besides ensuring a constant motor torque throughout a wide range of frequencies without requiring the use of the servo-ventilation at low rpm, provides fast and precise output according to the application dynamic conditions allowing high torque overload of the motor.

Conceived for extremely different and variable supply conditions, Drivon is available both in single-phase/three-phase version (200 ÷260 V / 47 ÷ 63 Hz) with a motor power between 0.25 and 1.5 kW, and in three-phase version (360 ÷ 480 V / 47 ÷ 63 Hz) with a motor power between 0.25 and 5.5 kW. The different functions of this software provide a wide range of standard and optional interfaces for a simple and flexible use. The electronic part, available in 10 power sizes, is located in two different chassis sizes, one for power up to 1.5 kW and the other for power up to 5.5 kW.

The product design considers the following aspects:

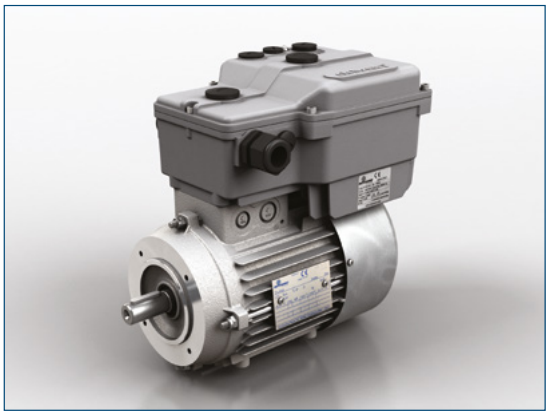
- power efficiency
- modular configuration and expansion possibility
- potential target markets
- user-friendliness
- future design development flexibility

Following these guidelines, Motovario has developed DRIVON, which belongs to the STANDARD segment along with all products of the reference competitors in the AC Induction market.



INVERTER FUNCTIONAL CHARACTERISTICS:

- FOC open-loop control of asynchronous motors
- Input for incremental encoder as speed feedback
- Available according to UL/CSA standards
- Possibility to set parameters through field Bus
- Many functions may be assigned to digital inputs, in particular UP/DOWN function
- Possibility to set the reference frequency



Inverter motor with single-phase supply

Inverter motor with three-phase supply

3 INDUSTRY SECTORS

The features of DRIVON enable its application in many industry sectors that require specific performance and functions:

- **CONVEYOR BELTS**
- **PALLETISERS**
- **PUMPS**
- **FANS**
- **SCREW CONVEYORS**
- **MIXERS**
- **ROTARY TABLES**
- **PRESSES**
- **WINDERS/UNWINDERS**
- **ELEVATORS (NO ZERO-SPEED)**

4 PLUS & BENEFIT

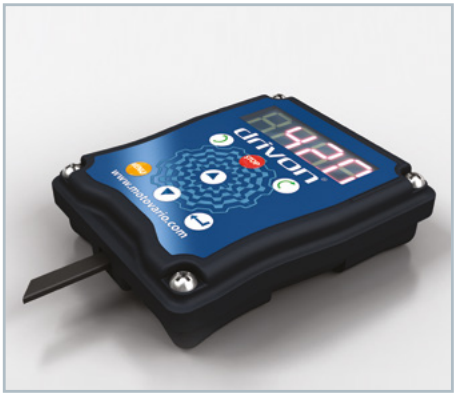
Motovario Drivon inverter motor is the solution to a series of applications present in many industrial environments. Conveyor belts, pumps, fans and other applications in which the decentralised solution is used for reducing the complexity and the overall dimensions of the switchboard and for reaching the performance and efficiency levels required by the market.

REDUCING THE USE OF FORCED-VENTILATION

The perfect integration between Motovario motors and the management software installed inside the Drivon allows to reduce the use of forced-ventilation in the applications that require low rpm. This is due to the optimisation of the software that integrates the motors' characteristics, but also the use of electric motors with IE2 power efficiency levels.

SMART KEYPAD

Thanks to the optional keypad and the parameter copy function, the use of Drivon is more practical and quick during the product set-up phase. This function enables to apply the same parameters to inverter motors with the same configuration. In addition it is possible to start the inverter motor in two directions and display several details on the keypad.



FIRMWARE UPDATE

The firmware update takes place through USB port, accessible by removing a cover located on the inverter case, and a software on PC.

PC SOFTWARE CONFIGURATION

The program grants access to all the inverter parameters for both reading and writing (on-line modification of the inverter parameters) and the relating save operation in a file on the PC.
The configuration software also incorporates a digital oscilloscope for tracking the check values.

SAFE TORQUE OFF BUILT-IN SAFETY

The machine directive defines the safety requirements that each machine must comply with in order to be granted the CE marking and enter the market or be manufactured in the European Union countries.
In order to do this, all machine operations must have a certain level of safety and be equipped with systems capable of being activated in the event of an emergency, so as to stop the motor and cut off the power supply, until the correct level of safety and the normal operating conditions are restored.
To satisfy this safety need, Motovario has integrated in Drivon a Safe Torque Off system that cuts off the motor in case of an emergency, in compliance with ISO 13849-1.

5 DESIGNATION

Designation Example
DV340-G3-0220M-KP1-IOA5-TBH100L-B5-FM/S-EMB6-UL

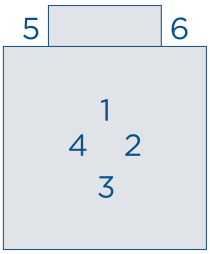
Inverter Type	Power supply	Rated Speed (RPM)	Motor Inverter Power	Manual Adjustment Control	Accessories / Expansion Modules	Motor Type	Motor size	Motor Version	Brake Type	Brake Power Supply	Brake Control	Other Options
DV	**340**	**G3**	**0220M**	**KP1**	**IOA5**	**TBH**	**100L**	**B5**	**FM**	**/S**	**EMB6**	**UL**
DV	123	G1	0025S	ISI	NO	TS	71A	B5	FM	/S	EMB5	IC416
	340	G2	0037S	KP1	IOA5	TH	...	B14	MS		EMB6	UL
		G3	0043S	KP2	PDP5	TBS	132MB	B3			BC	
		G4	0055S	KP3	IOA6	TBH		B35				
			0064S	KP4	PDP6			B34				
			0075S	PS5								
			0095S	PS6								
			0110S									
			0130S									
			0150S									
			0190M									
			0220M									
			0260M									
			0300M									
			0380M									
			0400M									
			0520M									
			0550M									

1/3PH 230V 123
3PH 400V 340

950 rpm G1
1450 rpm G2
1650 rpm G3
2450 rpm G4

EMB5 Electro Mechanical Braking Module in position 5
EMB6 Electro Mechanical Braking Module in position 6
BC Braking Chopper Module
(sole position on the cover)

NO No Expansion Module
IOA5 I/O Module Type A in position 5
PDP5 Profibus DP Module in position 5
IOA6 I/O Module Type A in position 6
PDP6 Profibus DP Module in position 6
IOB5 I/O Module Type B in position 5
IOB6 I/O Module Type B in position 6



025S 0.25kW inverter Small size
037S 0.37kW inverter Small size
....
190M 1.90kW inverter Medium size
220M 2.2kW inverter Medium size
....

ISI Integrated Standard Interface
KP1 Keypad Pos.1
KP2 Keypad Pos.2
KP3 Keypad Pos.3
KP4 Keypad Pos.4
PS5 PotiSwitch Pos.5
PS6 PotiSwitch Pos.6

6 COMPLIANCE DIRECTIVES AND STANDARDS

EN 61800-1:1998-02	Adjustable speed electrical power drive systems Part 1: General requirements and rating specifications for variable-speed low-voltage drives with d.c. motors
EN 61800-2:1998-04	Adjustable speed electrical power drive systems Part 2: General requirements and rating specifications for low-voltage drives with a.c. motors
EN 61800-3:2004-12	Adjustable speed electrical power drive systems Part 3: EMC requirements and specific test methods
EN 61800-5-1:2007-09	Adjustable speed electrical power drive systems Part 5-1: Safety requirements - Electrical, thermal and energy safety
EN 61800-5-2:2007-10	Adjustable speed electrical power drive systems Part 5-2: Safety requirements - Functional safety
EN 61800-7-1:2008-04	Adjustable speed electrical power drive systems Part 7-1: Generic interface and use of profiles for power drive systems - Interface definition
2006/95/EC	Low voltage directive
2004/108/EC	EMC directive (Electromagnetic compatibility)

AVAILABLE CERTIFICATIONS

UL (508c) “UL Standard for Safety for Power conversion equipment”

cUL (CSA C22.2 No. 14) “Industrial Control Equipment”

CE

7 OPERATING CHARACTERISTICS

Drivon is an inverter motor with sensorless field orientation speed control that also integrates a V/f control. Drivon is optimised for working at best with the Motovario motors, since the parameters of the motors are integrated in the inverter management software.
Drivon is capable of managing the speed variation, taking advantage of various sources that interact with the inverter motor by means of the built-in or optional I/O. Drivon can receive digital signals that, if properly programmed, can perform various functions, but it can also be controlled thanks to the integrated field bus (Modbus or CANopen) or by means of the optional ones.

Speed variation mode:

- Built-in potentiometer
- Keypad up/down buttons
- Up/down inputs from digital inputs (potentiometer motor)
- Fixed frequency selected from digital input binary combination
- Analogue input (programmable +/-10V or 0-20mA)
- Built-in potentiometer + analogue input algebraic addition
- 0-300KHz frequency input (on optional board)
- Modbus RTU register
- CANopen DSP402

With the programmable digital inputs it is possible to assign different functions to them, among which:

- start/stop
- motion inversion (relative direction control)
- clockwise start (absolute direction control)
- counter-clockwise start (absolute direction control)
- potentiometer motor
- fixed frequency binary combination
- quick emergency stop enable, according to a ramp that may be parametrised
- emergency stop enable at maximum current
- alarm

Drivon can also use the encoder for speed loop feedback through a special connector.

The optional keypad with integrated display provides several details, for example:

- Motor speed (rpm)
- Torque delivered (%)
- Torque current (A)
- Magnetic current (A)
- Reference frequency (Hz)
- Output frequency (Hz)

It is also possible to introduce a scale factor between the measure chosen from the previous list and the one actually displayed on the keypad.

FIELD BUS

Drivon is designed to be used in those applications that need to communicate with the automation world and this is why Motovario designed it with the possibility of relying on the Modbus RTU and CANopen DSP 402 communication protocols. These two field buses are integrated in the software and have special connections.

8 TECHNICAL DATA RANGE

Power supply	1ph230V	3ph400V
Power range	0.25 – 1.5 kW	0.25 – 5.5 KW
Motor sizes	71-80-90	71-80-90-100-112-132
Inverter sizes	S	S-M
Constant torque speed ranges	50÷950 50÷1450	50÷950 50÷1450 50÷1650 50÷2450
Speed range	0 ÷ 3000 rpm	
Frequency range	0 ÷ 150 Hz	
Frequency resolution	0.01 Hz	
Motor control	Sensorless vectorial, V/f scalar	
Motor starting torque	200% of the rated torque	
100% torque step response	150ms	
Current overload	150% / 60s ; 200% / 3s	
Frequency reference	Integrated potentiometer, analogue input, binary fixed frequency, pulse train, fieldbus, digital Up/Down, keyboard, IP66 potentiometer, multi source (sum)	
Direction selection	Digital inputs, keyboard, fieldbus, IP66 switch (optional)	
Analogue inputs	1 x (-10÷10V) / (0-20mA)	
Digital inputs	4 multifunction (+1 optional)	
Thermal probe inputs	1 x bimetallic (+1 x PTC/PT100 optional)	
Built-in potentiometer	1 with Start/Stop function (+1 optional IP66)	
Encoder input	1 incremental Line Driver (speed loop)	
Analogue outputs	1 x (0-10V) multifunction (optional)	
Digital Outputs	1 multifunction (optional)	
Relay outputs	1 multifunction (+1 optional)	
Serial interfaces	USB	
Integrated field BUS	402 CANopen, Modbus RTU	
Integrated safety	Safe Torque Off, short circuit, temperature	
On-board power supplies	1x10V, 1x24VDC	
Other Functions	• Parametric V/f curve (V/f control mode) • Parametric S ramps • PI process controller • Jog function • Electronic torque limiter • DC-bus accessible • Integrated multiple dynamic braking • Parameter Copy Keyboard • I/O Expansions (optional) • Braking chopper and resistor (optional) • Synchronised electromechanical brake control (optional) • Configuration software via PC with integrated digital oscilloscope	
Protection rating	IP55-56-66	

9 VERSIONS

The DRIVON model is available in two different versions, which are distinguished by

- Power supply type
- Power range
- Rated operating speeds

VERSION	Power supply	Power range	Rated operating speeds
DV123	1ph 230V	0.25 – 1.5 kW	950 rpm 1450 rpm
DV340	3ph 400V	0.25 – 5.5 kW	950 rpm 1450 rpm 1650 rpm 2450 rpm

The term *rated operating* speed can be understood as the minimum speed at which the motor-inverter delivers its nominal power with continuity, or rather the maximum speed at which it is able to guarantee its nominal torque with continuity.

VERSIONE DV123

In this version, the rated operating speeds G1 and G2 are only available at the power ratings of 0.25 - 1.5 kW.

RATED OPERATING SPEED G1:

Drivon	Supply voltage (ph x V)	Supply current at 230V (A)	Rated output (kW)	Rated operating speed (rpm)	Inverter size	Motor size
DV123-G1-0025S-TS71	1 x 180...260	1.1	0.25	950	S	71
DV123-G1-0037S-TS80	1 x 180...260	1.8	0.37	950	S	80
DV123-G1-0055S-TS80	1 x 180...260	2.5	0.55	950	S	80
DV123-G1-0075S-TH90	1 x 180...260	3,0	0.75	950	S	90
DV123-G1-0110S-TH100	1 x 180...260	3,9	1.1	950	S	100
DV123-G1-0150S-TH100	1 x 180...260	5,2	1.5	950	S	100

RATED OPERATING SPEED G2:

Drivon	Supply voltage (ph x V)	Supply current at 230V (A)	Rated output (kW)	Rated operating speed (rpm)	Inverter size	Motor size
DV123-G2-0025S-TS71	1 x 180...260	1,1	0.25	1450	S	71
DV123-G2-0037S-TS71	1 x 180...260	1,5	0.37	1450	S	71
DV123-G2-0055S-TS80	1 x 180...260	2,0	0.55	1450	S	80
DV123-G2-0075S-TH80	1 x 180...260	2,5	0.75	1450	S	80
DV123-G2-0110S-TH90	1 x 180...260	3,5	1.1	1450	S	90
DV123-G2-0150S-TH90	1 x 180...260	4,8	1.5	1450	S	90

VERSION DV340

This version is available with the rated operating speeds G1, G2, G3 and G4:

RATED OPERATING SPEED G1:

Drivon	Supply voltage (ph x V)	Supply current at 400V (A)	Rated output (kW)	Rated operating speed (rpm)	Inverter size	Motor size
DV340-G1-0025S-TS71	3 x 320...520	0,7	0.25	950	S	71
DV340-G1-0037S-TS80	3 x 320...520	1,2	0.37	950	S	80
DV340-G1-0055S-TS80	3 x 320...520	1,6	0.55	950	S	80
DV340-G1-0075S-TH90S	3 x 320...520	2,0	0.75	950	S	90
DV340-G1-0110S-TH100	3 x 320...520	2,5	1.1	950	S	100
DV340-G1-0150S-TH100	3 x 320...520	3,4	1.5	950	S	100
DV340-G1-0220M-TH112	3 x 320...520	4,7	2.2	950	M	112
DV340-G1-0300M-TH132	3 x 320...520	6,0	3.0	950	M	132
DV340-G1-0400M-TH132	3 x 320...520	8,0	4.0	950	M	132
DV340-G1-0550M-TH132	3 x 320...520	11,0	5.5	950	M	132

RATED OPERATING SPEED G2:

Drivon	Supply voltage (ph x V)	Supply current at 400V (A)	Rated output (kW)	Rated operating speed (rpm)	Inverter size	Motor size
DV340-G2-0025S-TS71	3 x 320...520	0,7	0.25	1450	S	71
DV340-G2-0037S-TS71	3 x 320...520	1,0	0.37	1450	S	71
DV340-G2-0055S-TS80	3 x 320...520	1,3	0.55	1450	S	80
DV340-G2-0075S-TH80	3 x 320...520	1,6	0.75	1450	S	80
DV340-G2-0110S-TH90S	3 x 320...520	2,3	1.1	1450	S	90
DV340-G2-0150S-TH90L	3 x 320...520	3,2	1.5	1450	S	90
DV340-G2-0220M-TH100	3 x 320...520	4,5	2.2	1450	M	100
DV340-G2-0300M-TH100	3 x 320...520	6,1	3.0	1450	M	100
DV340-G2-0400M-TH112	3 x 320...520	7,7	4.0	1450	M	112
DV340-G2-0550M-TH132	3 x 320...520	10,0	5.5	1450	M	132

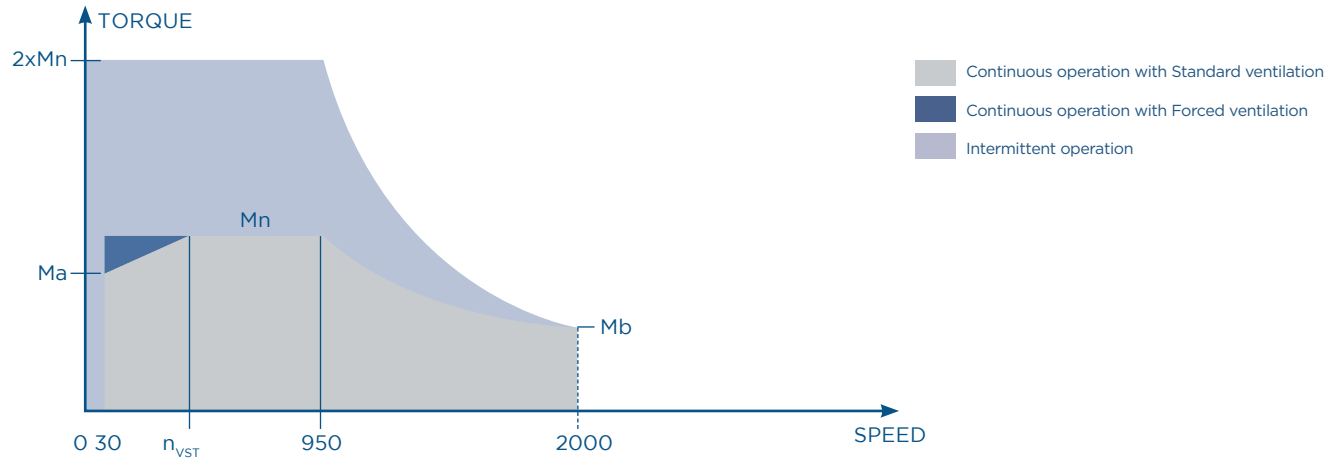
RATED OPERATING SPEED G3:						
Drivon	**Supply voltage (ph x V)**	**Supply current at 400V (A)**	**Rated output (kW)**	**Rated operating speed (rpm)**	**Inverter size**	**Motor size**
DV340-G3-0043S-TS71	3 x 320...520	1,3	0.43	1650	S	71
DV340-G3-0064S-TS80	3 x 320...520	2,0	0.64	1650	S	80
DV340-G3-0095S-TS80	3 x 320...520	2,8	0.95	1650	S	80
DV340-G3-0130S-TH90S	3 x 320...520	3,4	1.3	1650	S	90
DV340-G3-0190S-TH100	3 x 320...520	4,4	1.9	1650	M	100
DV340-G3-0260S-TH100	3 x 320...520	5,9	2.6	1650	M	100
DV340-G3-0380M-TH112	3 x 320...520	8,1	3.8	1650	M	112
DV340-G3-0520M-TH132	3 x 320...520	10,4	5.2	1650	M	132

RATED OPERATING SPEED G4:						
Drivon	**Supply voltage (ph x V)**	**Supply current at 400V (A)**	**Rated output (kW)**	**Rated operating speed (rpm)**	**Inverter size**	**Motor size**
DV340-G4-0043S-TS71	3 x 320...520	1,2	0.43	2450	S	71
DV340-G4-0064S-TS71	3 x 320...520	1,7	0.64	2450	S	71
DV340-G4-0095S-TS80	3 x 320...520	2,3	0.95	2450	S	80
DV340-G4-0130S-TH80	3 x 320...520	2,8	1.3	2450	S	80
DV340-G4-0190M-TH90S	3 x 320...520	3,9	1.9	2450	M	90
DV340-G4-0260M-TH90L	3 x 320...520	5,4	2.6	2450	M	90
DV340-G4-0380M-TH100	3 x 320...520	7,8	3.8	2450	M	100
DV340-G4-0520M-TH100	3 x 320...520	10,6	5.2	2450	M	100

10 TECHNICAL DATA PERFORMANCE

VERSION DV123

Rated operating speed **G1**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

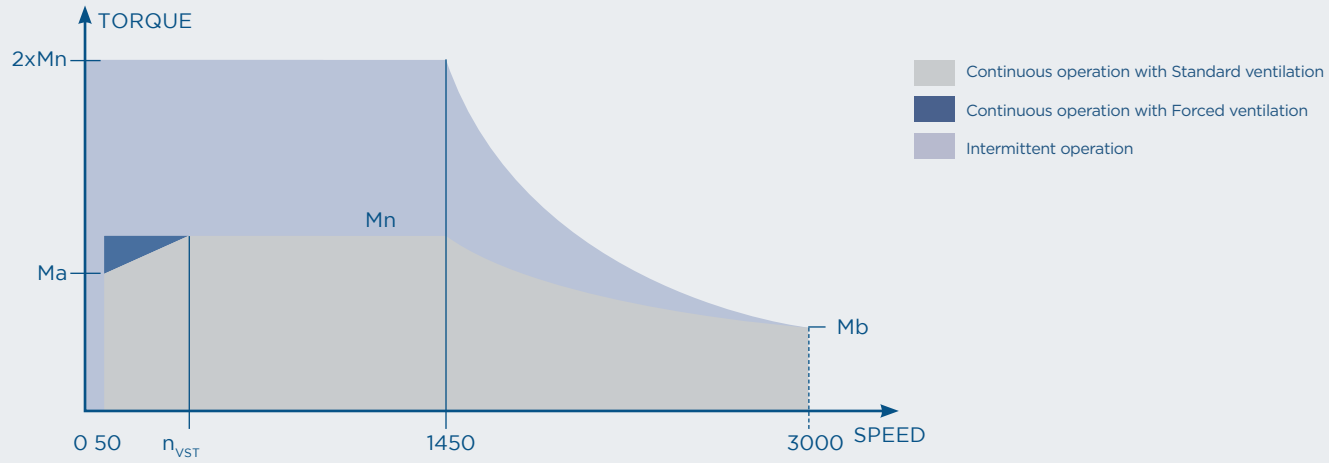
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	123	G1	0025S	TS71	0,25	950	2,5	2000	1,2	30	1,1	2,5	180
DV	123	G1	0037S	TS80	0,37	950	3,7	2000	1,8	30	1,6	3,7	180
DV	123	G1	0055S	TS80	0,55	950	5,5	2000	2,6	30	2,4	5,5	180
DV	123	G1	0075S	TH90S	0,75	950	7,5	2000	3,6	30	3,3	7,5	200
DV	123	G1	0110S	TH90L	1,10	950	11,1	2000	5,3	30	4,9	11,1	200
DV	123	G1	0150S	TH100L	1,50	950	15,1	2000	7,2	30	6,6	15,1	300

(1) With a 230V supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

VERSION DV123

Rated operating speed **G2**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

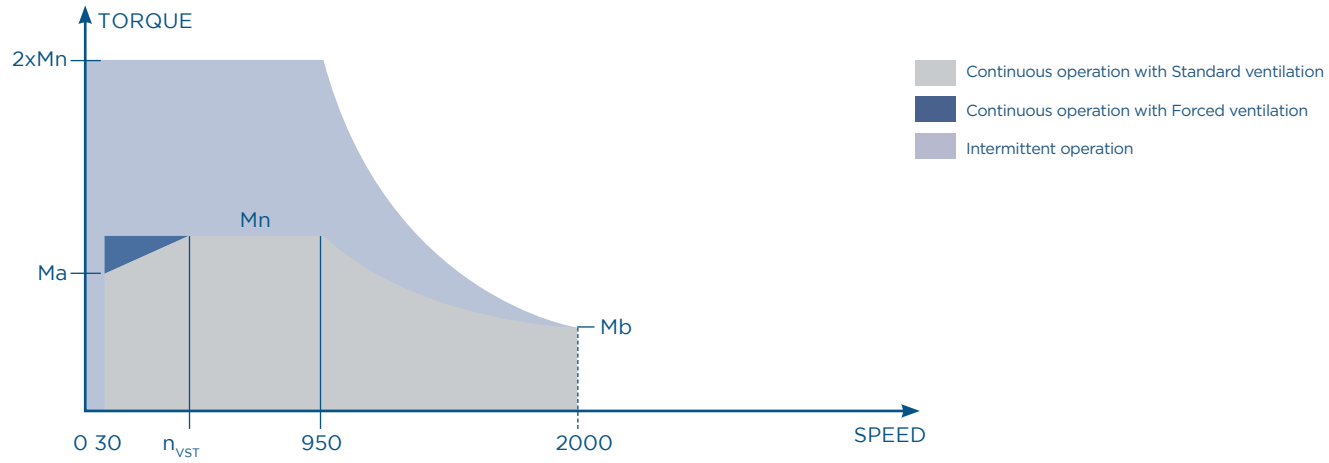
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	123	G2	0025S	TS71	0,25	1450	1,6	3000	0,7	50	0,7	1,6	250
DV	123	G2	0037S	TS71	0,37	1450	2,4	3000	1,1	50	1,1	2,4	250
DV	123	G2	0055S	TS80	0,55	1450	3,6	3000	1,6	50	1,6	3,6	250
DV	123	G2	0075S	TH80	0,75	1450	4,9	3000	2,1	50	2,2	4,9	250
DV	123	G2	0110S	TH90S	1,10	1450	7,2	3000	3,1	50	3,2	7,2	250
DV	123	G2	0150S	TH90L	1,50	1450	9,9	3000	4,3	50	4,4	9,9	400

(1) With a 230V supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

VERSION DV340

Rated operating speed **G1**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

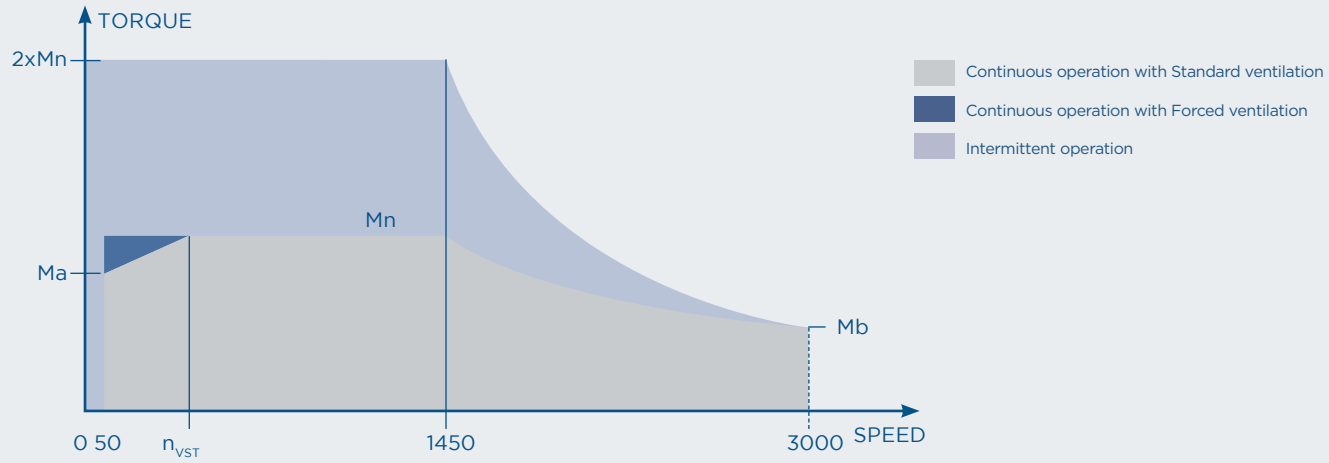
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	340	G1	0025S	TS71	0,25	950	2,5	2000	1,2	30	1,1	2,5	180
DV	340	G1	0037S	TS80	0,37	950	3,7	2000	1,8	30	1,6	3,7	180
DV	340	G1	0055S	TS80	0,55	950	5,5	2000	2,6	30	2,4	5,5	180
DV	340	G1	0075S	TH90S	0,75	950	7,5	2000	3,6	30	3,3	7,5	200
DV	340	G1	0110S	TH90L	1,10	950	11,1	2000	5,3	30	4,9	11,1	200
DV	340	G1	0150S	TH100L	1,50	950	15,1	2000	7,2	30	6,6	15,1	300
DV	340	G1	0220M	TH112	2,20	950	22,1	2000	10,5	30	9,7	22,1	350
DV	340	G1	0300M	TH132	3,00	950	30,2	2000	14,3	30	13,3	30,2	350
DV	340	G1	0400M	TH132	4,00	950	40,2	2000	19,1	30	17,8	40,2	350
DV	340	G1	0550M	TH132	5,50	950	55,5	2000	26,3	30	24,4	55,5	400

(1) With a 400V network supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

VERSION DV340

Rated operating speed **G2**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

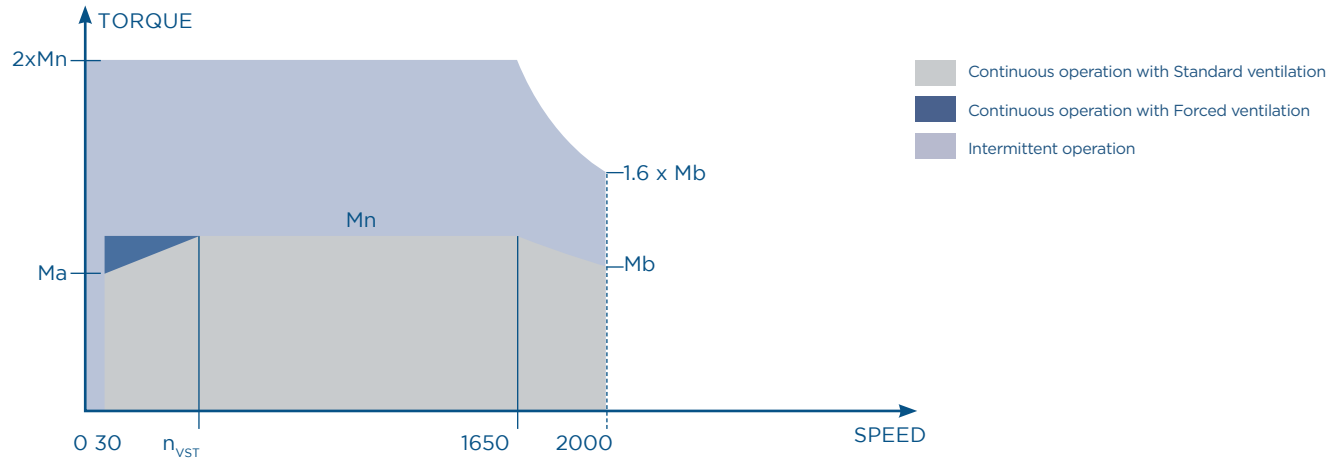
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	340	G2	0025S	TS71	0,25	1450	1,6	3000	0,7	50	0,7	1,6	250
DV	340	G2	0037S	TS71	0,37	1450	2,4	3000	1,1	50	1,1	2,4	250
DV	340	G2	0055S	TS80	0,55	1450	3,6	3000	1,6	50	1,6	3,6	250
DV	340	G2	0075S	TH80	0,75	1450	4,9	3000	2,1	50	2,2	4,9	250
DV	340	G2	0110S	TH90S	1,10	1450	7,2	3000	3,1	50	3,2	7,2	250
DV	340	G2	0150S	TH90L	1,50	1450	9,9	3000	4,3	50	4,4	9,9	400
DV	340	G2	0220M	TH100	2,20	1450	14,5	3000	6,3	50	6,5	14,5	500
DV	340	G2	0300M	TH100	3,00	1450	19,8	3000	8,6	50	8,9	19,8	500
DV	340	G2	0400M	TH112	4,00	1450	26,4	3000	11,4	50	11,8	26,4	500
DV	340	G2	0550M	TH132	5,50	1450	36,2	3000	15,7	50	16,2	36,2	600

(1) With a 230V supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

VERSION DV340

Rated operating speed **G3**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

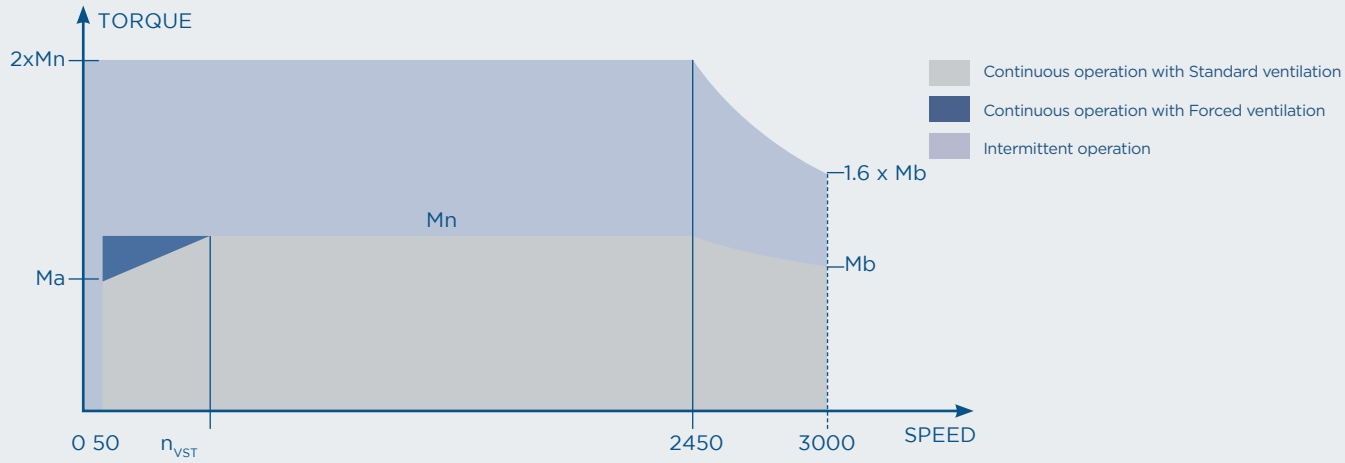
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	340	G3	0043S	TS71	0,43	1650	2,5	2000	1,2	30	1,1	2,5	180
DV	340	G3	0064S	TS80	0,64	1650	3,7	2000	1,8	30	1,6	3,7	180
DV	340	G3	0095S	TS80	0,95	1650	5,5	2000	2,6	30	2,4	5,5	180
DV	340	G3	0130S	TH90S	1,3	1650	7,5	2000	3,6	30	3,3	7,5	200
DV	340	G3	0190M	TH90L	1,9	1650	11,1	2000	5,3	30	4,9	11,1	200
DV	340	G3	0260M	TH100L	2,6	1650	15,1	2000	7,2	30	6,6	15,1	300
DV	340	G3	0380M	TH112	3,8	1650	22,1	2000	10,5	30	9,7	22,1	350
DV	340	G3	0520M	TH132	5,2	1650	30,2	2000	14,3	30	13,3	30,2	350

(1) With a 400V network supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

VERSION DV340

Rated operating speed **G4**



Pn = motor shaft nominal power
Mn = continuous nominal torque
Ma = continuous torque at minimum speed
Mb = continuous torque at maximum speed
nn = rated speed
nmin = minimum speed
nmax = maximum speed
nVST = forced ventilation speed threshold

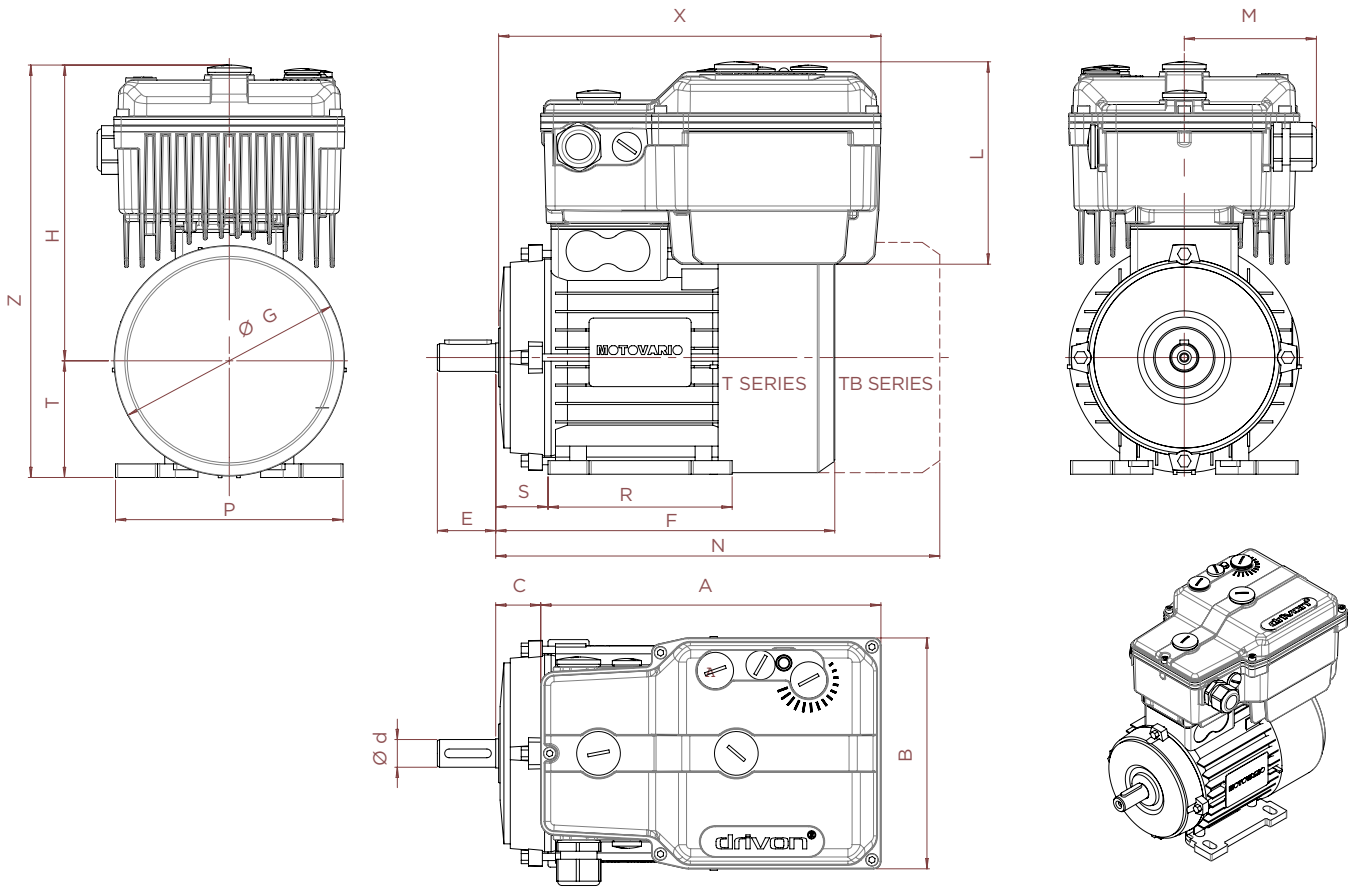
Drivon					Pn (kW)	nn (rpm)	Mn (Nm) (1)	nmax (rpm)	Mb (Nm) (1)	nmin (rpm)	Ma (Nm) (1)		n_{VST} (rpm) (2)
											with STANDARD ventilation	with FORCED ventilation	
DV	340	G4	0043S	TS71	0,43	2450	1,6	3000	0,7	50	0,7	1,6	250
DV	340	G4	0064S	TS71	0,64	2450	2,4	3000	1,1	50	1,1	2,4	250
DV	340	G4	0095S	TS80	0,95	2450	3,6	3000	1,7	50	1,6	3,6	250
DV	340	G4	0130S	TH80	1,3	2450	4,9	3000	2,3	50	2,2	4,9	250
DV	340	G4	0190M	TH90S	1,9	2450	7,2	3000	3,4	50	3,2	7,2	250
DV	340	G4	0260M	TH90L	2,6	2450	9,9	3000	4,7	50	4,4	9,9	400
DV	340	G4	0380M	TH100	3,8	2450	14,5	3000	7,0	50	6,5	14,5	500
DV	340	G4	0520M	TH100	5,2	2450	19,8	3000	9,6	50	8,9	19,8	500

(1) With a 400V network supply voltage

(2) At an ambient temperature of 25 °C and a carrier frequency of 8 kHz

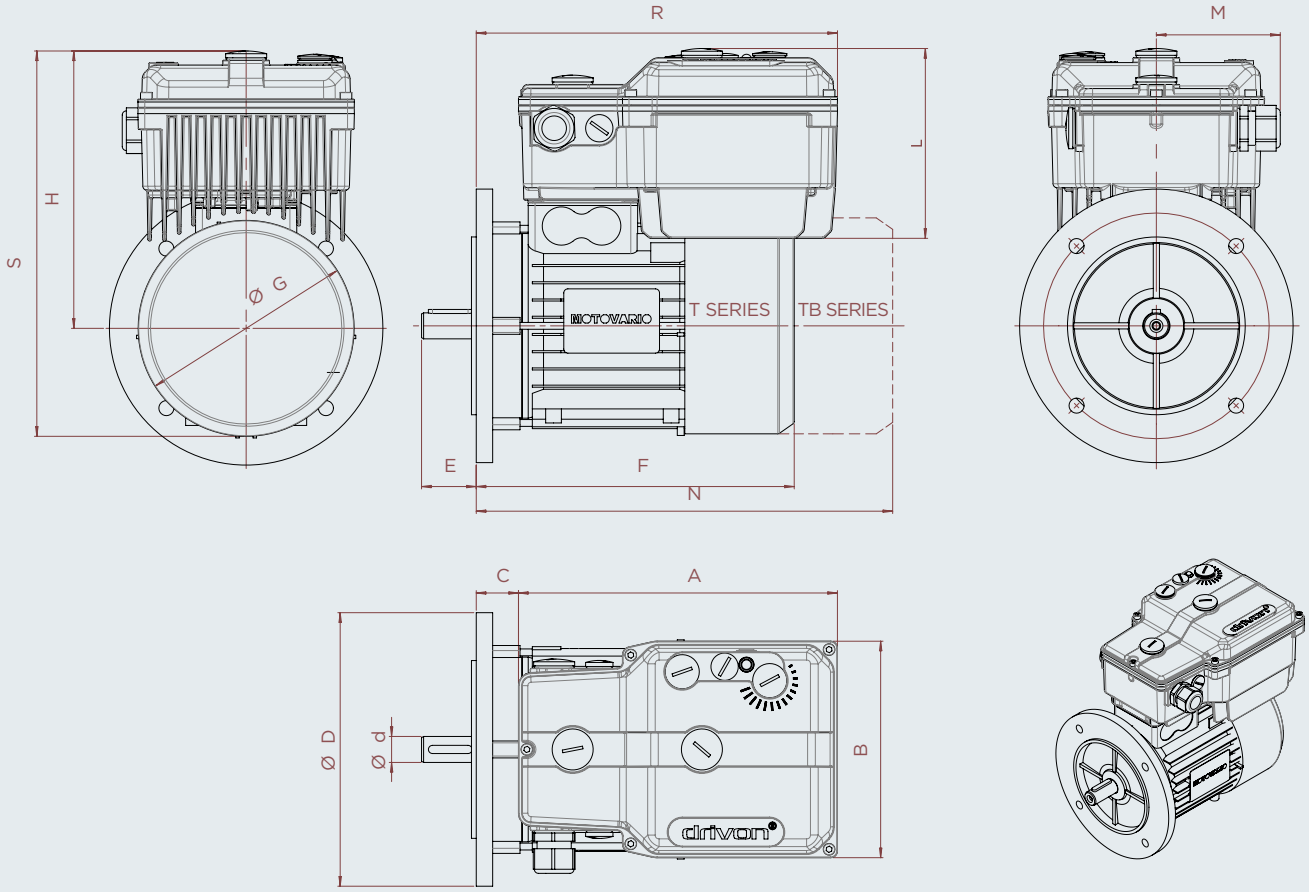
11 TECHNICAL DATA DIMENSIONS

B3



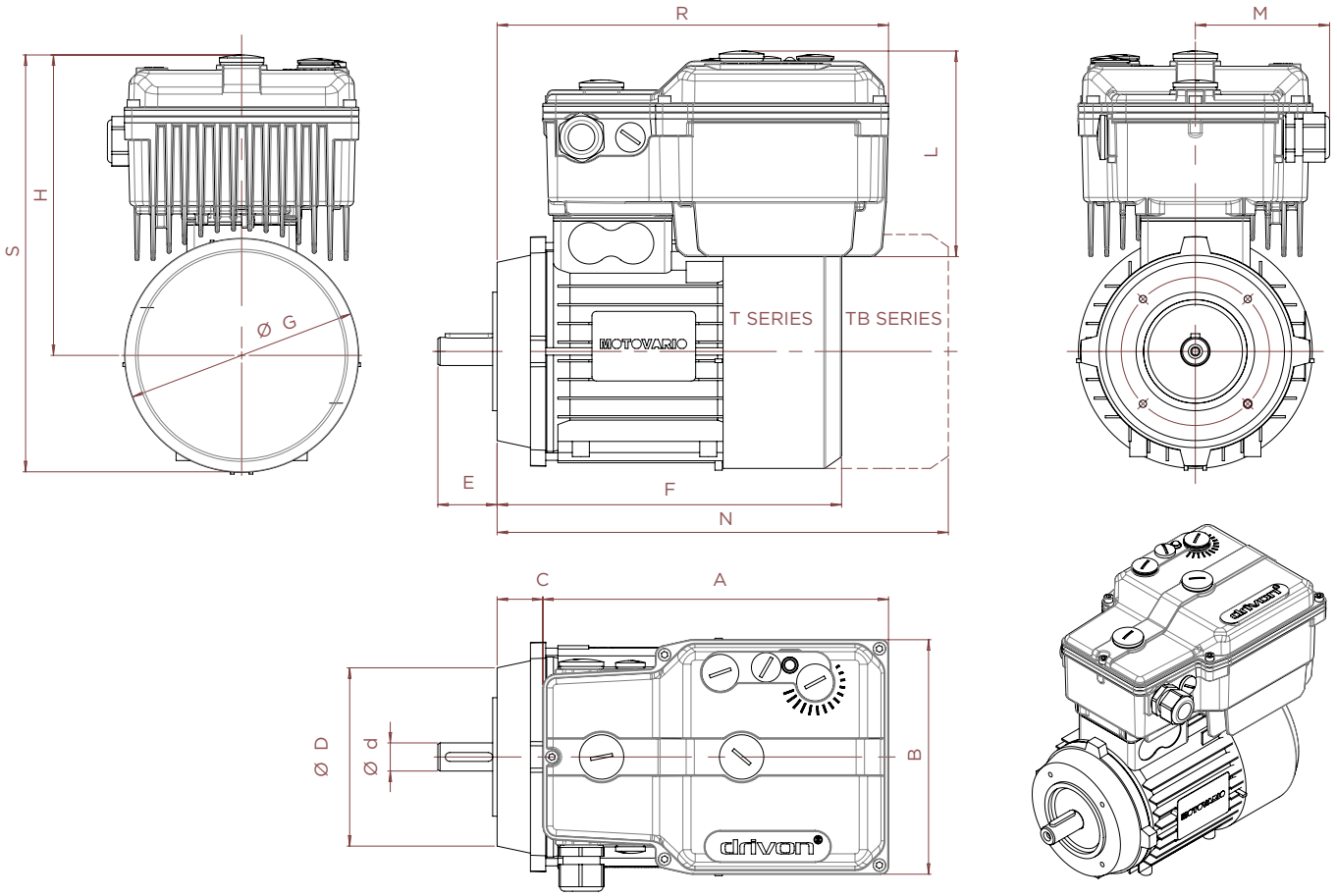
Inverter size	Motor size	A	B	C	Ød	E	F	ØG	H	L	M	N	P	R	S
S	71	233	158	27	14	30	209	139	197	139	91	276	132	108	35
S	80	233	158	31	19	40	233	158	206	139	91	304	156	122	38
S	90S	233	158	42	24	50	248	173	221	139	91	325	172	136	36
S	90L	233	158	33	24	50	273	173	221	139	91	350	172	155	35
S	100	233	158	41	28	60	308	191	221	139	91	390	192	170	47
M	90S	258	193	42	24	50	248	173	215	152	102	325	172	136	36
M	90L	258	193	33	24	50	273	173	215	152	102	350	172	155	35
M	100	258	193	41	28	60	308	191	224	152	102	390	192	170	47
M	112	258	193	44	28	60	323	211	238	152	102	419	221	175	51
M	132	258	193	59	38	80	372	249	272	152	102	462	260	175	69

B5



Inverter size	Motor size	A	B	C	ØD	Ød	E	F	ØG	H	L	M	N	R	S
S	71	233	158	27	160	14	30	209	139	197	139	91	276	260	267
S	80	233	158	31	200	19	40	233	158	206	139	91	304	264	285
S	90S	233	158	42	200	24	50	248	173	221	139	91	325	275	308
S	90L	233	158	42	200	24	50	273	173	221	139	91	350	275	308
S	100	233	158	55	250	28	60	308	191	221	139	91	390	288	317
M	90S	258	193	33	200	24	50	248	173	215	152	102	325	291	302
M	90L	258	193	33	200	24	50	273	173	215	152	102	350	291	302
M	100	258	193	41	250	28	60	308	191	224	152	102	390	299	320
M	112	258	193	44	250	28	60	323	211	238	152	102	419	302	344
M	132	258	193	59	300	38	80	372	249	272	152	102	462	317	397

B14



Inverter size	Motor size	A	B	C	ØD	Ød	E	F	ØG	H	L	M	N	R	S
S	71	233	158	27	105	14	30	209	139	197	139	91	276	260	267
S	80	233	158	31	120	19	40	233	158	206	139	91	304	264	285
S	90S	233	158	42	140	24	50	248	173	221	139	91	325	275	308
S	90L	233	158	42	140	24	50	273	173	221	139	91	350	275	308
S	100	233	158	55	160	28	60	308	191	221	139	91	390	288	317
M	90S	258	193	33	140	24	50	248	173	215	152	102	325	291	302
M	90L	258	193	33	140	24	50	273	173	215	152	102	350	291	302
M	100	258	193	41	160	28	60	308	191	224	152	102	390	299	320
M	112	258	193	44	160	28	60	323	211	238	152	102	419	302	344
M	132	258	193	59	200	38	80	372	249	272	152	102	462	317	397

12 TECHNICAL DATA
WEIGHTS

Series	Power supply	Dimension	Power [kW]	Weight [kg]
DV	1PH	TS071	0,37	8,18
		TS080	0,55	10,58
		TH080	0,75	13,86
		TH090	1,1	17,36
		TH090	1,5	18,56

Series	Power supply	Dimension	Power [kW]	Weight [kg]
DV	3PH	TS071	0,37	8,30
		TS080	0,55	10,70
		TH080	0,75	14,04
		TH090	1,1	17,54
		TH090	1,5	18,74
		TH100	2,2	27,37
		TH100	3	29,37
		TH112	4	35,35
		TH132	5,5	50,35

13 ACCESSORIES & OPTIONS

OPTIONAL KEYPAD

The optional keypad for Drivon expands and incorporates the product's functions. The keypad can:

- Start the inverter motor in both operating directions with two specific buttons.
- Set the inverter motor parameters by using the menus, easily available thanks to the keypad.
- Copy or transfer the same settings to two separate inverters with the same features.
- Control and monitor the inverter status by using the built-in display.

I/O EXPANSION MODULE

The I/O expansion module enables to connect various external signals to the inverter motor. The ones available are:

- PT100/NTC/PTC temperature sensor input
- No.1 Auxiliary analogue input +/-10V or 4-20mA
- No.1 Digital input with frequency up to 100KHz at 24V
- No.1 24V auxiliary digital output
- No.1 Switching relay digital output (max 250V)
- No.1 0-10V analogue output with 500Hz maximum band

POTENTIOMETER AND MODE SELECTOR

This supplementary module enables the installation of a potentiometer for modifying the Drivon speed by means of an analogue signal. In addition, it integrates the possibility of choosing the operating direction.

ELECTRO-MECHANICAL BRAKING MODULE

The function of managing the DC electro-mechanical brake is integrated in the Drivon software, but it requires the optional module for managing it.

The electro-mechanical braking module will enable Drivon to control the d.c. brake with the following voltages:

- 103V±5% with Drivon 1PH/3PH with 230Vac power supply
- 178V±5% with Drivon 3PH with 400Vac power supply

CHOPPER BRAKING MODULE

The function of managing the DC electro-mechanical brake is integrated in the Drivon software, but it requires the optional module for managing it. The chopper or dynamic braking module will enable to connect a braking resistance to Drivon.

The module also includes the electro-mechanical braking module

PROFIBUS COMMUNICATION MODULE

This optional module enables the communication through field bus with Profibus DP protocol. This allows managing a network with up to 127 inverters connected to a master PC and to monitor the inverter status.

14 SYMBOLS

P = Power (kW)
V = Voltage (V)
f = Frequency (Hz)
I = Current (A)
M = Torque (Nm)
n = Number of revolutions (rpm)
m = Weight (kg)
max = Maximum
min = Minimum
nom = Nominal

15 GENERAL SUPPLY CONDITIONS

All the products supplied by the Motovario Group are exclusively regulated by the general sales terms and conditions available on our website:

http://www.motovario.com/eng/corporate/sales-conditions

ATTENTION: Supply information
This catalogue refers to the DRIVON inverter motor, comprising an electric motor and an inverter, both supplied by Motovario S.p.A. The combination of the single inverter to any electric motor manufactured by other companies does not guarantee the performance values indicated in this catalogue and consequently it does not fall under the Warranty Conditions of Motovario S.p.A.

14

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