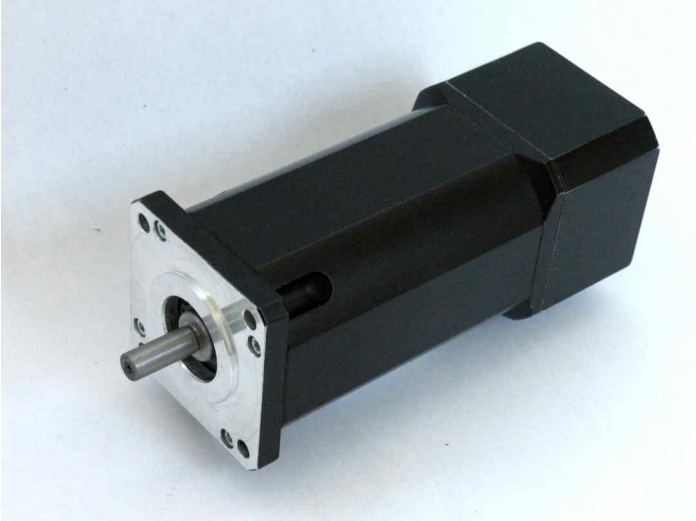
EMS0-W1248-4K-1-D0

In **All-in-one Product** you have everything that you need (Motor, Controller, Brake) without having to worry about the cabling.



Specification:

- ☑ Ultra Low inertia Sinusoidal Permanent Magnet Synchronous Motor (**PMSM**).
- ☑ **No Extra-Supply Needed**.
  Just simply connect the terminals of your Battery.
- ☑ Electronic Control Integrated On-Board, to ensure maximum efficiency/performance for your applications.
- ☑ Advanced algorithms for predictive speed and Torque Control with Regenerative Operation.
- ☑ Motor and Heat-sink Temperature Protection.
- ☑ Fully Configurable Velocity and Position Limits and Telemetry of the Internal functions.
- ☑ European Conformity CE, and designed in accordance with the **EMC** emission and immunity standards.

The main **key features** of our Elife-Motors:

- ☑ **Absolute Encoder as Feedback System Inside**
- ☑ **Motor and Heat-sink Temperature Control**
- ☑ **Over-Temperature Protection**
- ☑ **Electric Brake to Lock the Motor Shaft**

Motor	Value
Feedback Inside:	Absolute Encoder
Motor Type:	PMSM
Nominal Mechanical Power:	**270 W**
Stall Torque (T_0):	**2.00 Nm**
Nominal torque at 2.000 rpm:	**1.32 Nm**
Peak Torque, S.I.R. 10% (T_{pk}):	**4.0 Nm**
Nominal Speed:	1.000 rpm @12V 2.000 rpm @24V 3.000 rpm @36V 4.000 rpm @48V
High-Quality Motor Made in Italy	
Size and Weight Characteristics	
Weight:	1.4 kg
Motor Shaft:	∅8x21 mm NO key
Dimensions D x W x H mm:	NEMA 23 150x60x60

Drive	Value
Nominal Voltage Supply: (*Operating Range*)	**12V 24V 36V 48V** *(from 10 V to 70 V)*
I/O:	**One** Analog Input* **Three** Digital Inputs **Five** Digital Outputs
Encoder Emulation:	A, B, Z
Features:	Fault Output State STO Function Electric Brake
Operating Modes:	Standalone RS232 CANopen®
Italian Hi-Tech - developed and produced by: **Elife International S.r.l.**	

* You can work with the Analog Input from 0 to 5 V or from 0 to 10 V

Elife International

www.elifeinternational.com

+39.0565.944121 info@elifeinternational.com

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The main **key features** of Motors:

DIGITAL I/O

GND signal Internally connected to Battery Negative (0V)
(all input are active low if connected to GND)

- **BRK - BRAKE FUNCTION**
- **EN - ENABLE FUNCTION** the Motor starts when EN is active
- **F/R** the motor turns clockwise when F/R is active and turn counterclockwise when F/R is disconnected
- **SERVICE** only for FW programming

- **ENCODER EMULATION A B Z** programmable 8-16-32-64-128-256 pulses/revolution
- **ENCODER EMULATION readable by CANopen®** 1.024 pulses/revolution
- **OUTPUT SIGNAL FREQUENCY** 1Hz every 10 rpm (e.g. 200Hz = 2.000 rpm)
- **ALARM STATUS** The output goes to 5V in case of alarm
- **STO** Safe Torque Off
  N. 1 outSTO
  N. 1 inSTO
  the Motor goes in torque when inSTO and outSTO are connected to each other.

ANALOG I/O

GND ignal Internally connected to Battery Negative (0V)

- **Speed Reference Input**
  0÷5V / 0÷10V selectable
- **Power Supply Output** 5V 50mA (for potentiometer)

COMMUNICATION INTERFACE

- **RS232** not isolated
- **CANopen®** not isolated
  with electronic management of the settable internal termination resistor (120 ohm)

PROTECTIONS

- **Reverse battery polarity protection**
- **Overtemperature Protection**
  Motor and Power Electronics
- **Protection against electrostatic discharge on RS232**

nota: A min. 500W power supply may be used, but connected to a capacity of at least 10,000 uF
The maximum current drawn is: 32A@12V 16A@24 12A@36V 10A@48V

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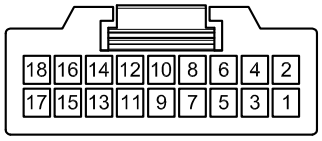
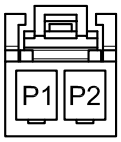
EXTERNAL SIGNAL CONNECTOR			
PIN	***NAME***	***DESCRIPTION***	***OPERATING RANGE***
1	IN1 - BRAKE	Digital Input 1	Active Low (tied to GND)
2	IN2 - ENABLE	Digital Input 2	Active Low (tied to GND)
3	IN3 - FORWARD/REVERSE	Digital Input 3	Active Low (tied to GND)
Potentiometer			
4	ANALOG IN	Analog Input	From 0 to 5V (or 10V)
5	GND	Common Ground	-
6	VDD POT	Supply Output to Potentiometer	Vout = 5V Iout =100mA
Incremental Encoder			
7	OUT1 - A	Digital Output 1 - A	Vout=5V, Iout =100mA
8	OUT2 - B	Digital Output 1 - B	Vout=5V, Iout =100mA
9	OUT3 - Z	Digital Output 3 - Z	Vout=5V, Iout =100mA
10	OUT4 - FREQ	Digital Output 4 - FREQ	Vout=5V, Iout =100mA
11	OUT5 - ALARM	Digital Output 5 - ALARM	Vout=5V, Iout =100mA
Firmware Update			
12	SERVICE	Service Input	GND ONLY to UPDATE firmware
13	STO	STO Input	**In According to STO-OUT Voltage**
14	STO-OUT	STO Output	Vout=+VBAT, Iout =50mA
15	CAN-	CAN-	Standard CAN
16	CAN+	CAN+	Standard CAN
17	RS232-TX	RS232 - TX Data Output	Standard RS232
18	RS232-RX	RS232 - RX Data Input	Standard RS232

EXTERNAL POWER CONNECTOR			
PIN	***NAME***	***DESCRIPTION***	***OPERATING RANGE***
P1	-BATT	Negative Battery Terminal	-
P2	+BATT	Positive Battery Terminal	From 10 to 54V

CONNECTOR 5016461800
FEMALE - WIRING VIEW



CONNECTOR 1722561102
FEMALE - WIRING VIEW



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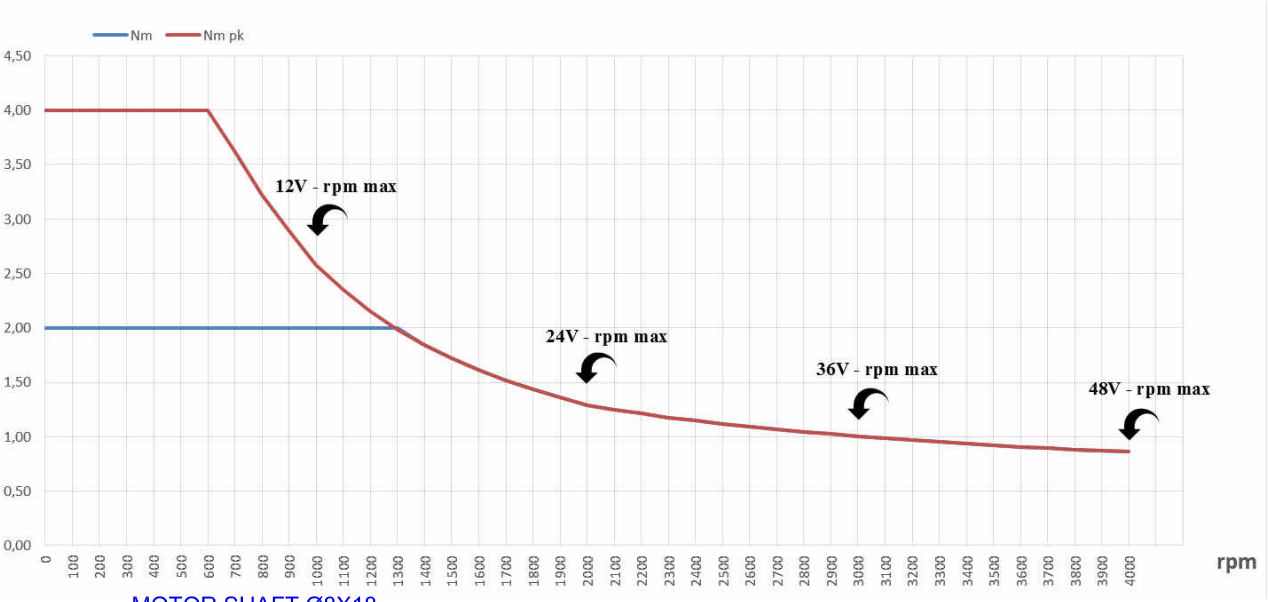

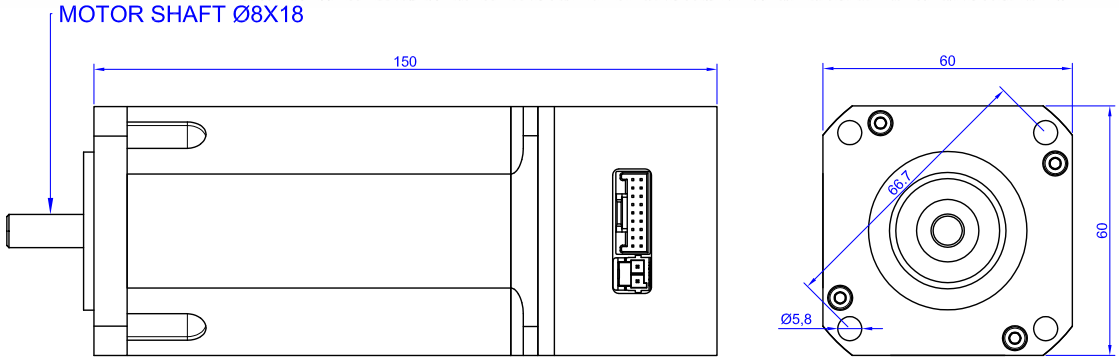

(a) **Lateral View**

(b) **Front View (NEMA 23)**