



## ▶ Industrial LoadSense

**8863R1001**

- Size NEMA 34..... 3.7"
- Torque..... Up to 6 Nm
- Communication..... CANopen, Step/Direction



This “all in one” brushless DC electrical direct drive with integrated intelligent controller is able to perform the most challenging positioning tasks. This high torque density motor is available with several communication options, perfectly suited for decentralised applications.

### ▶ Main Features

#### Features

- Closed Loop control
- Maximum efficiency / optimal power consumption
- Low noise and low vibrations design
- IP65/67 Protection
- 40° to 85°C operating temperature
- Starter kit for easy start-up

#### Benefits

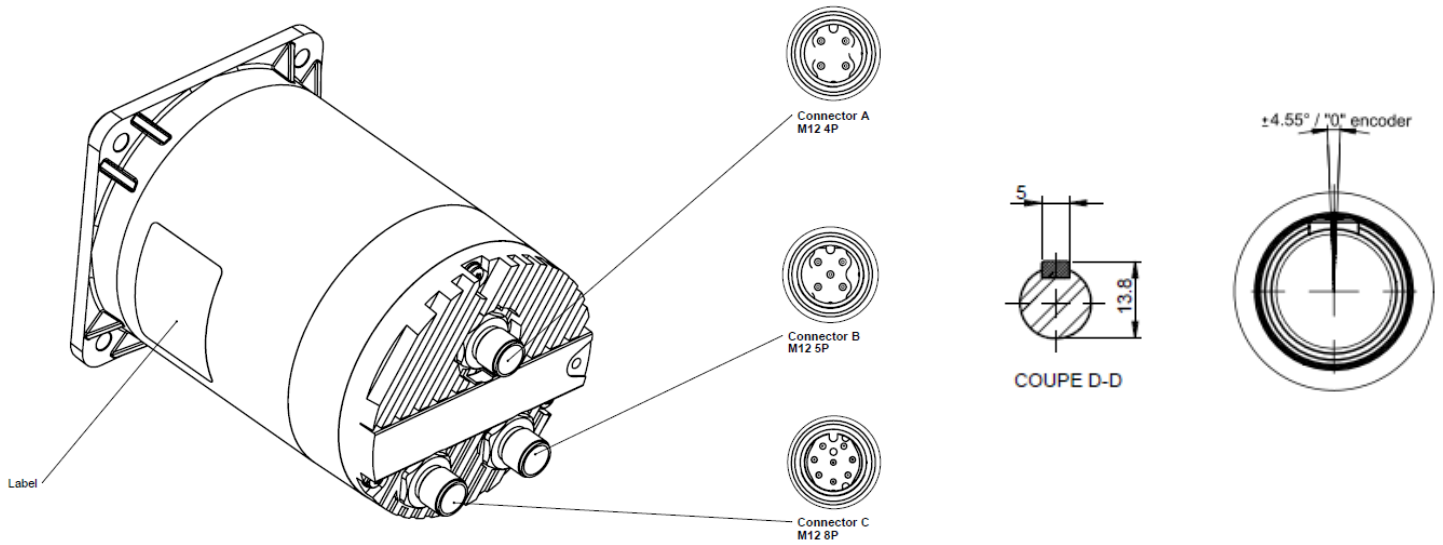
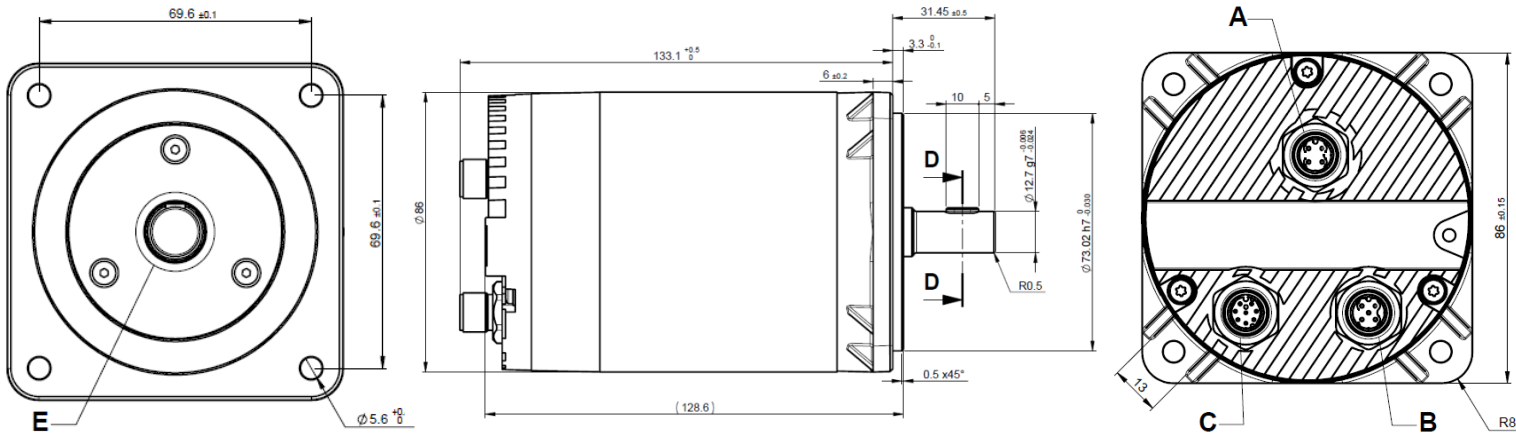
- No additional driver and control system required
- Suitable for: in- and outdoor environment intermittent movements
- Easy to integrate thanks to compact design
- Flexibility for embedded customized software
- Gearless - long service life

### ▶ Technical data

Power supply (+/- 10%)	<b>24 ... 48VDC</b>
Peak current consumption	<b>18 A (&lt;200 ms)</b>
Nominal current consumption	<b>8 A max</b>
Maximal input power (Full load)	<b>160 W (@48V) / 90W (@24V)</b>
Rotor inertia	<b>2930 gcm<sup>2</sup></b>
Holding torque at standstill	<b>6500 mNm</b>
Weight	<b>3000 g</b>

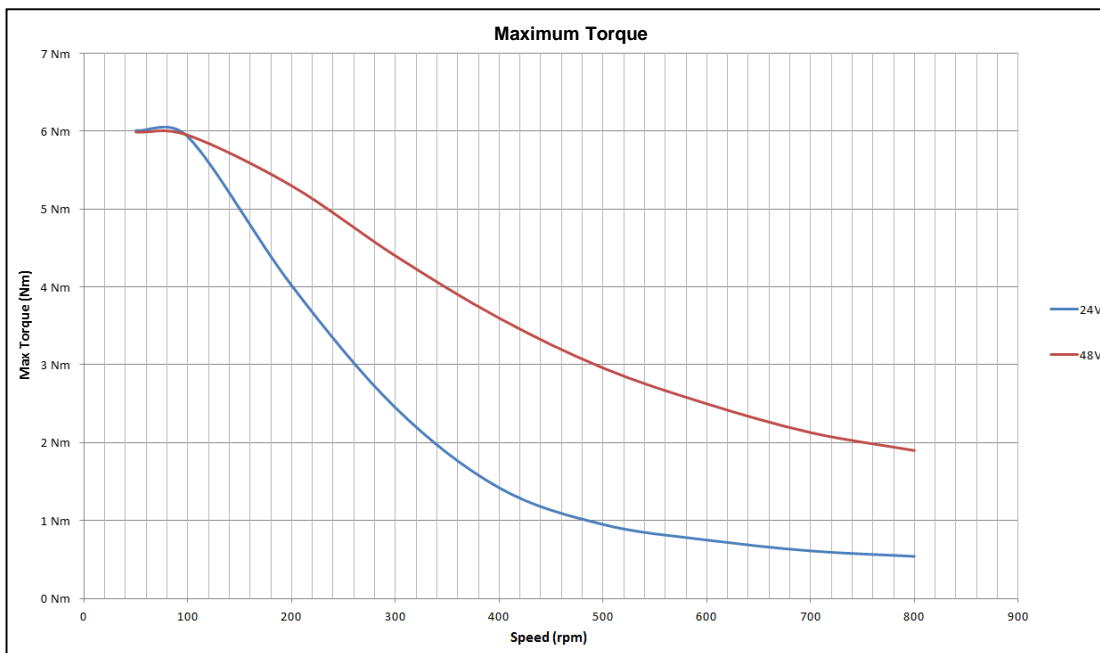
► Dimensions

Drawing not to scale. All dimensions in mm.



► Torque characteristics

Indicative Values. Not Contractual



Maximum performances opposite are not for constant use. In such conditions, the motor might overheat (depending on cooling capabilities of the global system) and shut-down itself

Special requirements upon customer specifications. Right to change reserved.

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SONCEBOZ SA

2605 Sonceboz – Switzerland

Tel. +41(0) 32 488 11 11

Fax +41(0) 32 488 11 00

info@sonceboz.com - www.sonceboz.com



**MOTOR FUNCTIONALITIES**

		CANopen				Step/Dir					
<b>GENERAL</b>	<b>Bootloader</b>	Enables specific functionalities (specific sw on demand) or to update the standard one, following Sonceboz's standard software improvements									
	<b>Save Parameters</b>	Enables to save a specific configuration in a non-volatile memory									
	<b>Restore Defaults Parameters</b>	Enables to restore Sonceboz defaults parameters (end of production parameters)									
	<b>Motor Ids</b>	Gives information about the motor (name, revision, ...)									
	<b>PDOs Mapping</b>	Enables to put any data from the object dictionary on the Process Data Objects for faster real time use of the motor									
	<b>Errors</b>	Gives a feedback on the errors detected by the motor (internal and/or from application)									
	<b>Motor Blocked Protection (time)</b>	Enables to activate/configure a maximum time where the motor is blocked									
	<b>Control / Status</b>	Used for control and feedback of the motor (State Machine)									
	<b>Mode of Operations</b>	Enables to select one of the implemented mode of operation (Profile Position, Profile Velocity, Homing)									
	<b>Position Regulators</b>	Enables to change dynamic/behaviour of the motor (notably at standstill)									
	<b>Temperature Measure</b>	Gives a feedback on the internal temperature of the motor									
	<b>Torque Rough Estimation</b>	Gives a rough estimation of the resistive torque apply on the motor (up to +60% error at high torques)									
	<b>OverTorque Protection</b>	Enables to activate/configure a maximum torque applied by the motor (Upon Request for correct implementation)									
	<b>Enable/Stop Logic Selection</b>	Enables to choose activation logic of stop input (active high or active low)									
<b>Output Frequency(Speed) Selection</b>	Enables to change the frequency of the output giving indication on the current speed										
		Profile Position		Profile Velocity		Homing		Step/Dir			
<b>SPECIFIC</b>	<b>Max Speed</b>	Enables to limit the speed during a positioning movement to a predefined value		<b>Speed Hyst. Validity</b>	Enables to configure the window (value and time of confirmation) of the speed confirmation flag activation		<b>Homing Method</b>	<b>µsteps selection</b>	Enables to select the µsteps control of the motor (full step, 1/2 step, 1/4 step, 1/8 step, 1/16 step)		
	<b>Acc / Dec</b>	Enables to parameter maximum acceleration / deceleration of a positioning movement to a predefined value		<b>Acc / Dec</b>	Enables to parameter maximum acceleration / deceleration at start and stop of a movement to a predefined value			<b>OverSpeed Protection</b>	Enables to activate/configure a maximum authorized frequency of the command input		
	<b>Command Factors</b>	Enables to change the unit of the Control input/command (by default in motor full steps)		<b>Command Factors</b>	Enables to change the unit of the control input/command (by default in rpm)		<b>Speeds</b>	Enables to parameter the speed when searching for a switch and the speed when searching for an index		<b>Steps error Hyst.</b>	Enables to activate/configure a real time protection against wrong positioning (max and min numbers of steps)
								<b>Correction</b>	Enables to activate an option to authorize the motor to go faster than the command if late (regarding commanded position)		

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## PIN ASSIGNMENTS

- Connector A : Power supply

Pin	Signal definition	Value
1	Power supply	24...48VDC
2	GND	-
3	GND	-
4	Power supply	24..48VDC

- Connector B : Communication

Pin	Signal definition	Value
1	GND	-
2	Not used	-
3	GND	-
4	CAN High	-
5	CAN low	-

- Connector C: Input / Output

Pin	Signal definition		Value	
	CANopen configuration	Step/Dir configuration	CANopen configuration	Step/Dir configuration
1	Not Used		Not Used	
2	Logical Input Stop		GND : Motor runs 5..48V : Motor stopped	
3	Output Frequency (Speed Information)		-	
4	Set Limit CW	Logical Input Step	GND: Limit not reached 5..48V: Limit reached	: 1 $\mu$ step
5	Set Limit CCW	Logical Input Direction	GND: Limit not reached 5..48V: Limit reached	GND: CCW 5..48V: CW
6	Power Supply for I/O		5..48V	
7	GND for I/O		-	
8	Logical Output Alarm		GND: No alarm 5..48V: Alarm active	

## INPUTS

- Logical supply:**

Inputs can be powered with a dedicated power supply which can be between 5V and 48V (+/-10%).

- CAN Communication:**

CAN pins can be used without Logical supply.

### ► Working conditions

- **Operating temperature range** ..... -40°C to 85° C

- **Protection class** ..... IP65 and IP67

- **Thermal and over/under voltage protections**

If the motor temperature exceeds 110° C or if the supply voltage comes outside its operating range (<11V or >49V), the driver is automatically switched off. This is intended to protect components from failure due to excessive temperature or under / over voltage.

Thermal hysteresis is ~10° C and voltage hysteresis is ~1 V.

The motor will wait for a “reset” command as specified by CANopen Norm before resuming its actions if the default is not present anymore

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