SONCEBOZ

▶ Industrial LoadSense

8863R1002

ACCURACY

SMART

HIGH PROTECTION DEGREES

- **Size NEMA 34…….. 5''**
- **Torque…….. Up to 9 Nm**
- **Communication……... CANopen, Step/Direction**

RoHS compliant 2002/95/EC

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 decentralized applications.

▶ Main Features

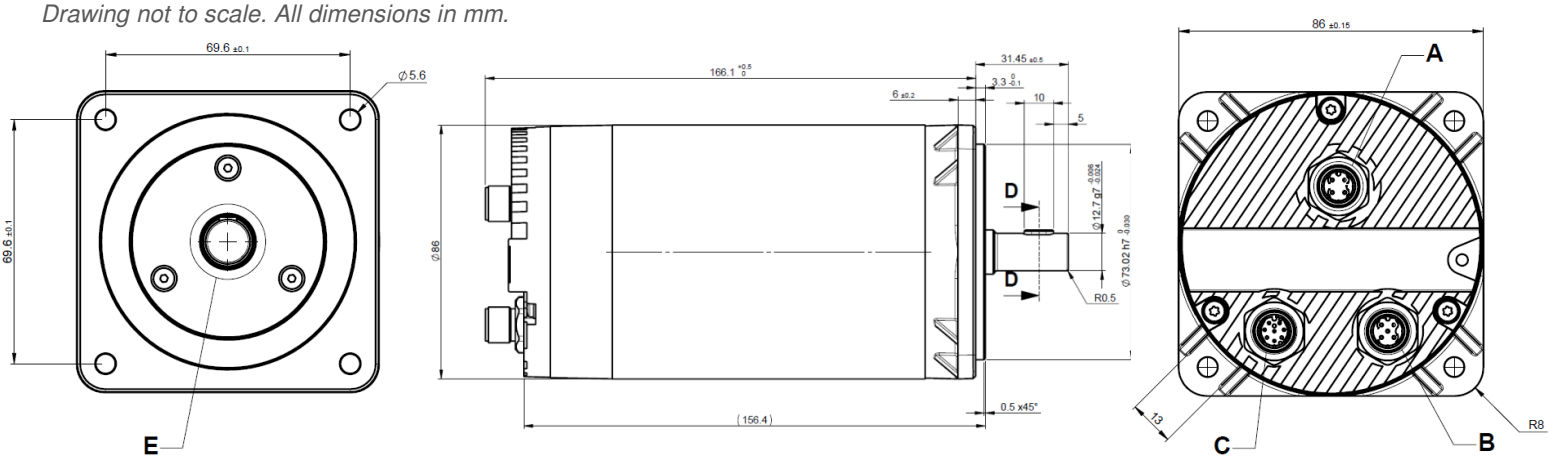
Features	Benefits
• Closed Loop control	• No additional driver and control system required
• Maximum efficiency / optimal power consumption	• Suitable for: in- and outdoor environment intermittent movements
• Low noise and low vibrations design	• Easy to integrate thanks to compact design
• IP65/67 Protection	• Flexibility for embedded customized software
• -40° to 85°C operating temperature	• Gearless - long service life
• Starter kit for easy start-up	

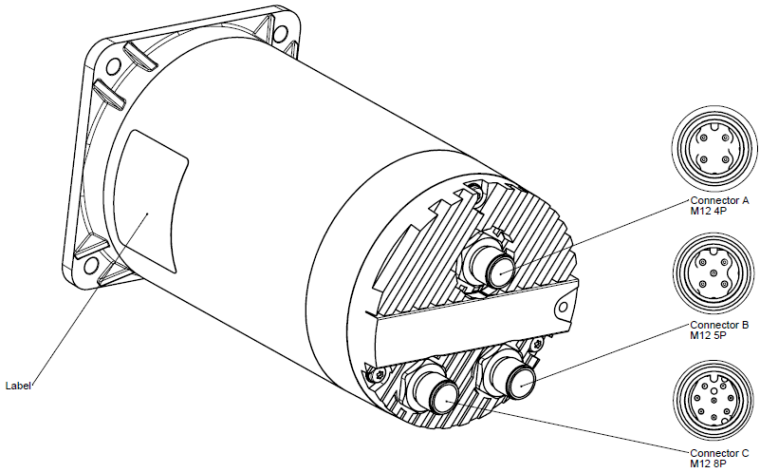
▶ Technical data

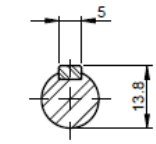
Power supply (+/- 10%)	**24 … 48VDC**
Peak current consumption	**18 A (<200 ms)**
Nominal current consumption	**8 A max**
Maximal input power (Full load)	**400 W**
Rotor inertia	**3950 gcm2**
Holding torque at standstill	**9000 mNm**
Weight	**4200 g**

▶Dimensions

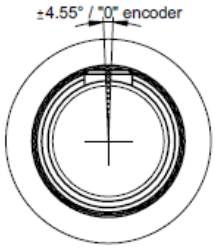
Drawing not to scale. All dimensions in mm.





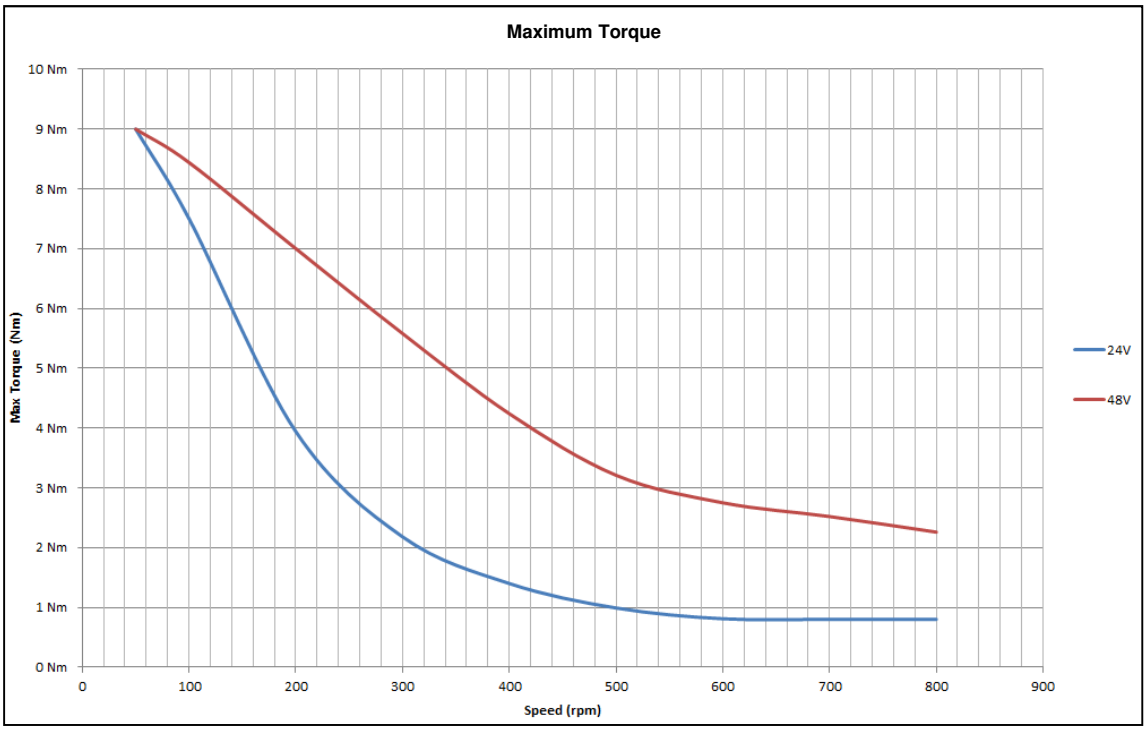


COUPE D-D



▶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

► Electrical Interface

MOTOR FUNCTIONALITIES

	CANopen						Step/Dir	
GENERAL	**Bootloader**	Enables specific functionalities (specific sw on demand) or to update the standard one, following Sonceboz's standard software improvements						
	Save Parameters	Enables to save a specific configuration in a non-volatile memory						
	Restore Defaults Parameters	Enables to restore Sonceboz defaults parameters (end of production parameters)						
	Motor Ids	Gives information about the motor (name, revision, …)						
	PDOs Mapping	Enables to put any data from the object dictionary on the Process Data Objects for faster real time use of the motor						
	Errors	Gives a feedback on the errors detected by the motor (internal and/or from application)						
	Motor Blocked Protection (time)	Enables to activate/configure a maximum time where the motor is blocked						
	Control / Status	Used for control and feedback of the motor (State Machine)						
	Mode of Operations	Enables to select one of the implemented mode of operation (Profile Position, Profile Velocity, Homing)						
	Position Regulators	Enables to change dynamic/behaviour of the motor (notably at standstill)						
	Temperature Measure	Gives a feedback on the internal temperature of the motor						
	Torque Rough Estimation	Gives a rough estimation of the resistive torque apply on the motor (up to +60% error at high torques)						
	OverTorque Protection	Enables to activate/configure a maximum torque applied by the motor (Upon Request for correct implementation)						
	Enable/Stop Logic Selection	Enables to choose activation logic of stop input (active high or active low)						
	Output Frequency(Speed) Selection	Enables to change the frequency of the output giving indication on the current speed						
	Profile Position		**Profile Velocity**		**Homing**		**Step/Dir**	
SPECIFIC	**Max Speed**	Enables to limit the speed during a positioning movement to a predefined value	**Speed Hyst. Validity**	Enables to configure the window (value and time of confirmation) of the speed confirmation flag activation	**Homing Method**	Enables to select one of the 9 Homing Methods: - Search Switch CW or CCW - Search Index CW or CCW - Search Switch Then Index starting CW or CCW - Search rising switch the falling switch in reverse direction starting CW or CCW - Set Homing (current position)	**µsteps selection**	Enables to select the µsteps control of the motor (full step, 1/2 step, 1/4 step, 1/8 step, 1/16 step)
	Acc / Dec	Enables to parameter maximum acceleration / deceleration of a positionning movement to a predefined value	**Acc / Dec**	Enables to parameter maximum acceleration / deceleration at start and stop of a movement to a predefined value			**OverSpeed Protection**	Enables to activate/configure a maximum authorized frequency of the command input
	Command Factors	Enables to change the unit of the Control input/command (by default in motor full steps)	**Command Factors**	Enables to change the unit of the control input/command (by default in rpm)	**Speeds**	Enables to parameter the speed when searching for a switch and the speed when searching for an index	**Steps error Hyst.**	Enables to activate/configure a real time protection against wrong positioning (max and min numbers of steps)
							Correction	Enables to activate an option to authorize the motor to go faster than the command if late (regarding commanded position)

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 µstep
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

• **Power 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 VCC I/O power 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, 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