

# Hybrid Stepper Motor CS-M23445B with Encoder



## Features:

- 2-phase hybrid stepper motor
- 1000-lines/Rev. encoder
- Standard NEMA 34 dimensions
- High torque design
- Brake

## Product Specification:

The CS-M23445B two-phase stepper motor with encoder feedback is designed to work with the Leadshine Hybrid Servo Drive CS-D808 or CS-D1008 to build a hybrid servo closed loop system (no loss of steps anymore). This version is additionally equipped with a brake that prevents the motor from rotating without active power supply.

## General Specification:

	CS-M23445	Einheit
Step Angle	1.8	Degree °
Holding Torque	4.5	Nm
Phase Current	6.0	A
Phase Resistance $\pm 10\%$	0.43	$\Omega$
Phase Inductance $\pm 20\%$	2.95	mH
Inertia	1400	gcm <sup>2</sup>
Weight	2.7	kg
Encoder Resolution	1000	Steps/rev.

## Encoder Specification:

Parameter	Min	Typical	Max	Unit
Operating Temperature	-40	-	100	°C
Supply Voltage	4.5	5	5.5	V DC
Output Current per Channel	-1	-	5	mA
Low Level Output Voltage	-	-	0.4	V DC
High Level Output Voltage	2.4	-	-	V DC
Count Frequency	-	-	100	KHz

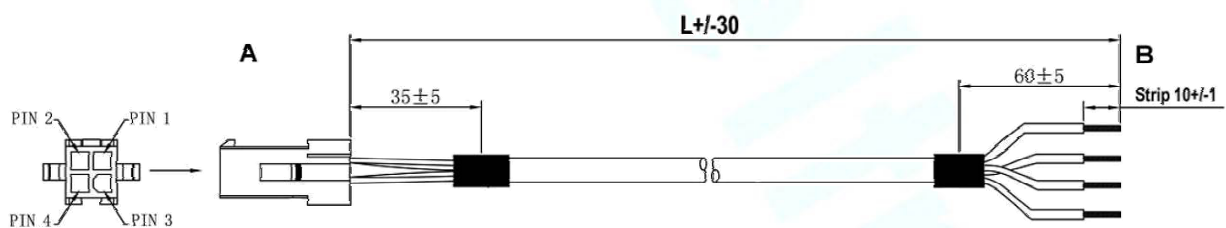
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## Encoder Extension Cable:



Pin	Name	Color	Description
1	EA+	Black	Encoder Channel A+
2	VCC	Red	+5V Power Input
3	GND	White	Ground (for power input)
4	NC	-	Not Connected
5	NC	-	Not Connected
6	NC	-	Not Connected
7	NC	-	Not Connected
8	NC	-	Not Connected
9	NC	-	Not Connected
10	NC	-	Not Connected
11	EB+	Yellow	Encoder Channel B+
12	EB-	Green	Encoder Channel B-
13	EA-	Blue	Encoder Channel A-
14	NC	-	Not Connected
15	NC	-	Not Connected

## Motor Extension Cable:



Pin	Name	Color	Description
1	B-	Blue	Phase B-
2	A-	Red	Phase A-
3	A+	Black	Phase A+
4	B+	Yellow/Green	Phase B+

## Brake Specification:

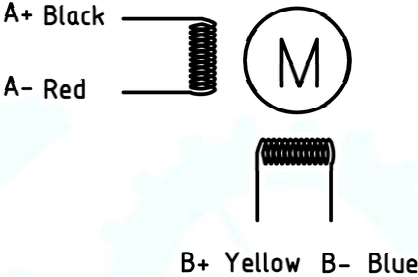
Wiring:	MS 30	MS 22	Data:	MS 30	MS 22
+ 24 V	Red	Green	Friction Torque:	6 Nm	4 Nm
GND	Black	White	electr. Power:	6,8 W	11 W

In the MS 22 variant, the wires for connecting the brake are integrated in the power supply cable.

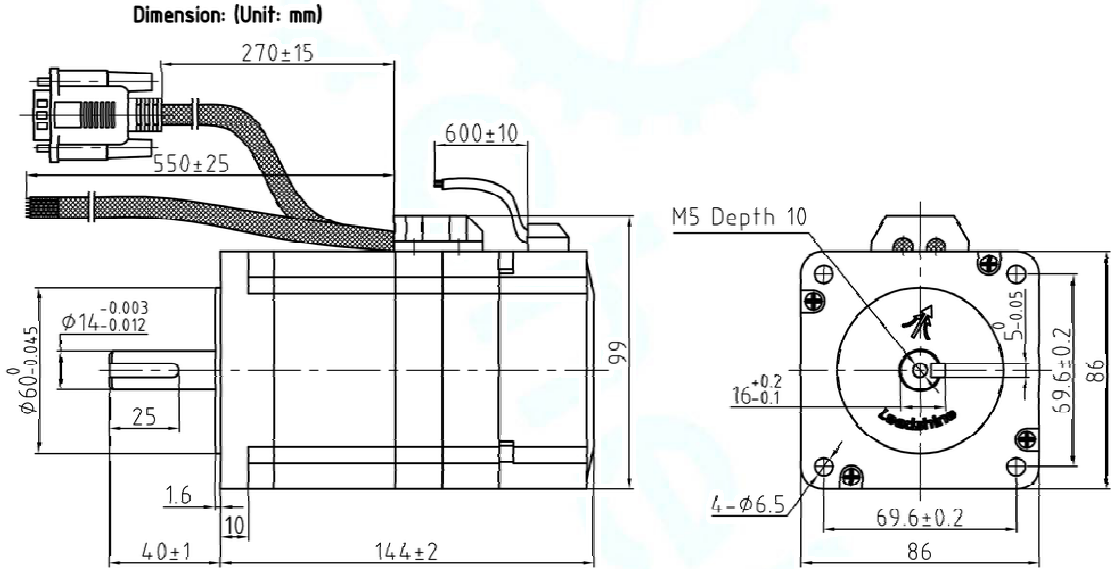
<b>!</b>	For the operation of the motor it is necessary that the brake is supplied with power, because the brake is closed without the specified power supply. The motor must not be operated when the brake is closed, as this will destroy the motor and the connected hardware.	<b>!</b>
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**Motor Wiring Diagram:**



**Mechanical Dimensions:**



**Torque Curve:**

