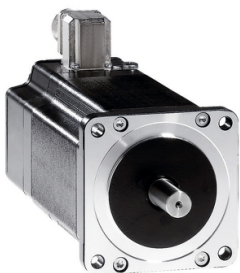


# Product data sheet

Specifications



3-phase stepper motor - 6.5 Nm - shaft  $\varnothing$  14 mm - L=128 mm - with brake

BRS39BH460FBA

⚠ Discontinued on: Aug 7, 2023

⚠ Discontinued

## Main

|                           |                       |
|---------------------------|-----------------------|
| Range compatibility       | Lexium SD3            |
| Product or component type | Motion control motor  |
| Device short name         | BRS3                  |
| Maximum mechanical speed  | 3000 rpm              |
| Motor type                | 3-phase stepper motor |
| Number of motor poles     | 6                     |
| Supply voltage limits     | 34 V AC<br>48 V DC    |
| Mounting support          | Flange                |
| Motor flange size         | 3.3 in (85 mm)        |
| Length                    | 8.5 in (217 mm)       |
| Centring collar diameter  | 2.4 in (60 mm)        |

## Complementary

|                                       |                                                                                                                                                                     |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Centring collar depth                 | 0.08 in (2 mm)                                                                                                                                                      |
| Number of mounting holes              | 4                                                                                                                                                                   |
| Mounting holes diameter               | 0.3 in (6.5 mm)                                                                                                                                                     |
| Circle diameter of the mounting holes | 3.90 in (98.99 mm)                                                                                                                                                  |
| Electrical connection                 | Terminal box                                                                                                                                                        |
| Holding brake                         | With                                                                                                                                                                |
| Shaft end                             | Smooth shaft                                                                                                                                                        |
| Second shaft                          | Without second shaft end                                                                                                                                            |
| Shaft diameter                        | 0.6 in (14 mm)                                                                                                                                                      |
| Shaft length                          | 1.2 in (30 mm)                                                                                                                                                      |
| Nominal torque                        | 53.1 lbf.in (6 N.m)                                                                                                                                                 |
| Holding torque                        | 57.5 lbf.in (6.5 N.m)                                                                                                                                               |
| Rotor inertia                         | 3.3 kg.cm <sup>2</sup>                                                                                                                                              |
| Resolution                            | 1.8 °, 0.9 °, 0.72 °, 0.36 °, 0.18 °, 0.09 °, 0.072 °, 0.036 ° step angle<br>200, 400, 500, 1000, 2000, 4000, 5000, 10000 steps number of full steps per revolution |
| Accuracy error                        | +/- 6 arc min                                                                                                                                                       |
| Maximum starting frequency            | 5.3 kHz                                                                                                                                                             |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                         |                                                  |
|-------------------------|--------------------------------------------------|
| [In] rated current      | 5.8 A                                            |
| Resistance              | 0.63 Ohm winding)                                |
| Time constant           | 10 ms                                            |
| Maximum radial force Fr | 110 N first shaft end)<br>75 N second shaft end) |
| Maximum axial force Fa  | 175 N tensile force)<br>30 N force pressure)     |
| Service life in hours   | 20000 h bearing)                                 |
| Angular acceleration    | 200000 rad/s²                                    |
| Net weight              | 9.5 lb(US) (4.3 kg)                              |

## Environment

|                                       |                                                                                                                                     |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | IEC 50347<br>IEC 60072-1                                                                                                            |
| Type of cooling                       | Natural convection                                                                                                                  |
| Ambient air temperature for operation | -13...104 °F (-25...40 °C)                                                                                                          |
| Ambient air temperature for storage   | -13...158 °F (-25...70 °C)                                                                                                          |
| Operating altitude                    | <= 1000 m without power derating                                                                                                    |
| Relative humidity                     | 15...85 % without condensation                                                                                                      |
| Vibration resistance                  | 20 m/s² maximum<br>A IEC 60034-14                                                                                                   |
| IP degree of protection               | IP56 total except shaft bushing: conforming to IEC 60034-5<br>IP41 shaft bushing without shaft seal ring: conforming to IEC 60034-5 |
| Temperature class                     | F winding IEC 60034-1                                                                                                               |

## Packing Units

|                              |                     |
|------------------------------|---------------------|
| Unit Type of Package 1       | PCE                 |
| Number of Units in Package 1 | 1                   |
| Package 1 Height             | 4.09 in (10.4 cm)   |
| Package 1 Width              | 7.09 in (18 cm)     |
| Package 1 Length             | 14.4 in (36.5 cm)   |
| Package 1 Weight             | 9.9 lb(US) (4.5 kg) |

## Contractual warranty

|                      |    |
|----------------------|----|
| Warranty (in months) | 18 |
|----------------------|----|



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

### Use Better

|  Materials and Substances |                                                            |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <a href="#">EU RoHS Directive</a>                                                                          | Pro-active compliance (Product out of EU RoHS legal scope) |
| PVC free                                                                                                   | Yes                                                        |

### Use Longer

|  Lifetime extension |    |
|------------------------------------------------------------------------------------------------------|----|
| Repair                                                                                               | No |

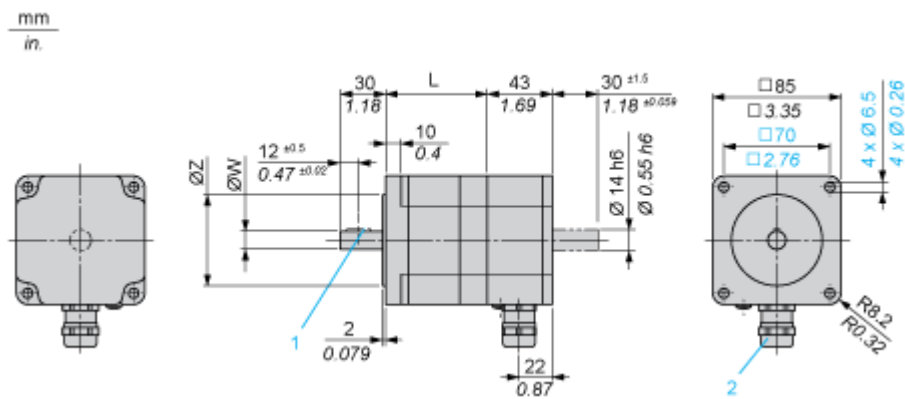
### Use Again

|  Repack and remanufacture |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circularity Profile                                                                                         | No need of specific recycling operations                                                                                                                                                                        |
| WEEE Label                                                                                                  |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

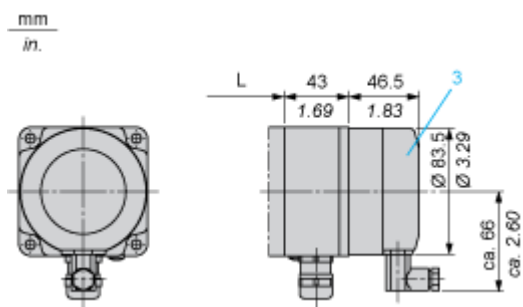
Dimensions Drawings

Dimensions

3-Phase Stepper Motor in Terminal Box Version



Holding Brake



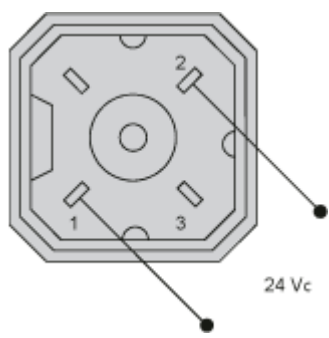
3 : Holding brake (optional)

| Dimensions in mm    |                   |                    |                           |                 |
|---------------------|-------------------|--------------------|---------------------------|-----------------|
| L                   | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) | Cable gland (2) |
| 127.5 (+0.6) (-0.8) | 14 h6             | 60 h8              | 5 x 6.5                   | ISO M20 x 1.5   |

| Dimensions in in.      |                   |                    |                           |                 |
|------------------------|-------------------|--------------------|---------------------------|-----------------|
| L                      | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) | Cable gland (2) |
| 5.02 (+0.023) (-0.031) | 0.55 h6           | 2.36 h8            | 0.20 x 0.25               | ISO M20 x 1.5   |

Connections and Schema

Wiring Diagram of Holding Brake

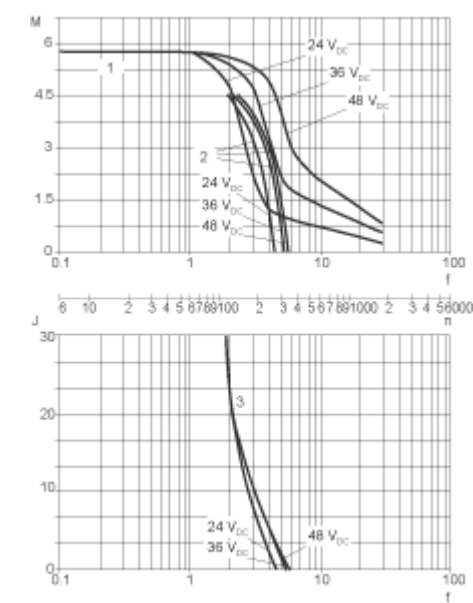


The connector is part of the scope of delivery. Connector designation: Hirschmann type G4 A 5M

Performance Curves

Torque Characteristics

Measurement at 1000 Steps/Revolution, Nominal Voltage DC Bus  $U_N$  and Phase Current  $I_N$



- M : Torque in Nm
- n : Speed in rpm
- f : Frequency in kHz
- J : Rotor inertia in kg.cm<sup>2</sup>
- 1 : Pull-out torque
- 2 : Pull-in torque
- 3 : Maximum load inertia