

# Product datasheet

Specifications



3-phase stepper motor - 6.78 Nm - shaft  $\tilde{\sim}$  14 mm - L=128 mm - with brake - conn

BRS39BW470FCA

⚠ Discontinued on: 11 Sept 2025

⚠ 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     | 230 V AC<br>325 V DC  |
| Mounting support          | Flange                |
| Motor flange size         | 85 mm                 |
| Length                    | 217 mm                |
| Centring collar diameter  | 73 mm                 |

## Complementary

|                                       |   |
|---------------------------------------|---|
| Centring collar depth                 | 2 mm  |
| Number of mounting holes              | 4   |
| Mounting holes diameter               | 6.5 mm  |
| Circle diameter of the mounting holes | 98.99 mm  |
| Electrical connection                 | Connector   |
| Holding brake                         | With  |
| Shaft end                             | Untapped  |
| Second shaft                          | Without second shaft end  |
| Shaft diameter                        | 14 mm   |
| Shaft length                          | 30 mm   |
| Nominal torque                        | 6 N.m   |
| Peak stall torque                     | 5.78 N.m  |
| Continuous stall torque               | 5.78 N.m  |
| Holding torque                        | 6.78 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  |
| [In] rated current         | 2.25 A   |
| Resistance                 | 6.5 Ohm (winding)                                  |
| Time constant              | 10 ms  |
| Maximum radial force Fr    | 110 N (first shaft end)<br>50 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/s <sup>2</sup>                          |
| Net weight                 | 4.3 kg   |

## Environment

|                                       |   |
|---------------------------------------|---|
| Standards                             | IEC 60072-1<br>IEC 50347  |
| Type of cooling                       | Natural convection  |
| Ambient air temperature for operation | -25...40 °C   |
| Ambient air temperature for storage   | -25...70 °C   |
| Operating altitude                    | <= 1000 m without power derating  |
| Relative humidity                     | 15...85 % without condensation  |
| Vibration resistance                  | 20 m/s <sup>2</sup> maximum<br>A conforming to IEC 60034-14   |
| IP degree of protection               | IP41 shaft bushing: conforming to IEC 60034-5<br>IP56 total except shaft bushing: conforming to IEC 60034-5 |
| Temperature class                     | F winding conforming to IEC 60034-1   |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 10.4 cm |
| Package 1 Width              | 18.0 cm |
| Package 1 Length             | 36.5 cm |
| Package 1 Weight             | 5.8 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 >](#)



### Environmental footprint

|  |   |
|--|---|
| Total lifecycle Carbon footprint                       | 1 834 kg CO2 eq.                              |
| Environmental Disclosure                               | <a href="#">Product Environmental Profile</a> |
| Carbon footprint of the manufacturing phase [A1 to A3] | 21 kg CO2 eq.                                 |
| Carbon footprint of the distribution phase [A4]        | 0.7 kg CO2 eq.                                |
| Carbon footprint of the installation phase [A5]        | 0 kg CO2 eq.                                  |
| Carbon footprint of the use phase [B2, B3, B4, B6]     | 1 811 kg CO2 eq.                              |
| Carbon footprint of the end-of-life phase [C1 to C4]   | 0.6 kg CO2 eq.                                |

## Use Better



### Materials and Substances

|  |  |
|--|--|
| Packaging made with recycled cardboard | Yes  |
| Packaging without single use plastic   | No   |
| EU RoHS Directive                      | <a href="#">Compliant By Exemption</a>   |
| REACH Regulation                       | <a href="#">Reference contains Substances of Very High Concern above the threshold</a> |
| PVC free                               | Yes  |

## Use Longer



### Lifetime extension

|        |    |
|--------|----|
| Repair | No |
|--------|----|

## Use Again



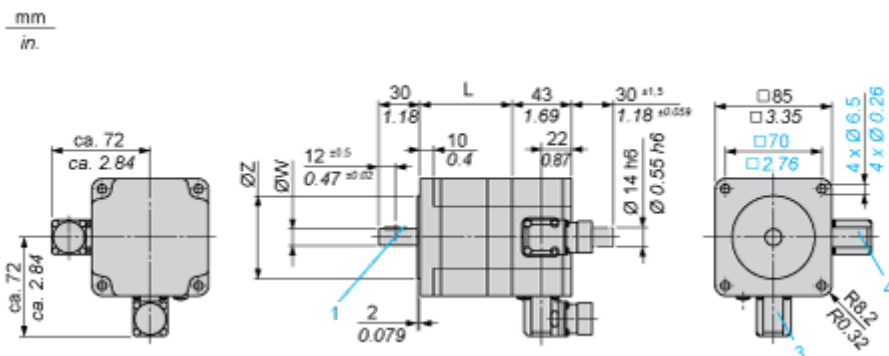
### Repack and remanufacture

|                                 |   |
|---------------------------------|---|
| End of life manual availability | <a href="#">No need of specific recycling operations</a>  |
| Take-back                       | Yes   |
| WEEE Label                      |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

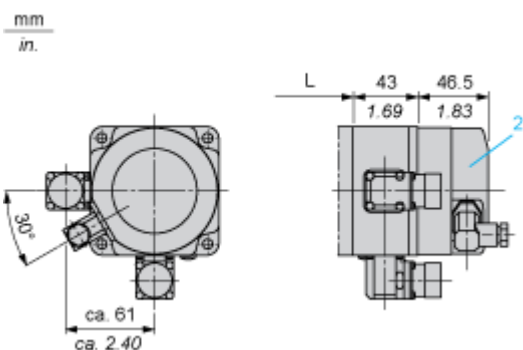
Dimensions

3-Phase Stepper Motor in Connector Version



- 3 : Motor connection 6 poles
- 4 : Motor connection (optional) 12 poles

Holding Brake



- 2 : Holding brake (optional)

Dimensions in mm

| L                   | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) |
|---------------------|-------------------|--------------------|---------------------------|
| 127.5 (+0.6) (-0.8) | 14 h6             | 73 h8              | 5 x 6.5                   |

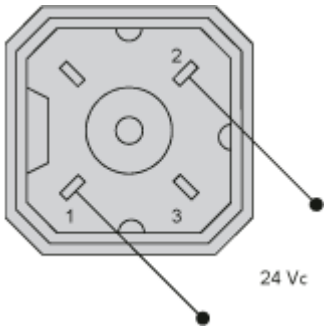
Dimensions in in.

| L                      | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) |
|------------------------|-------------------|--------------------|---------------------------|
| 5.02 (+0.023) (-0.031) | 0.55 h6           | 2.87 h8            | 0.20 x 0.25               |

Connections and Schema

Wiring Diagram of Holding Brake

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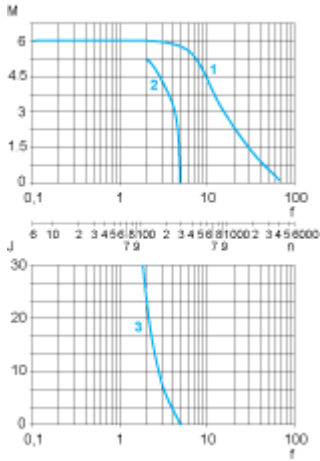


The connector is part of the scope of delivery. Connector designation: Hirschmann type G4 A 5M

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