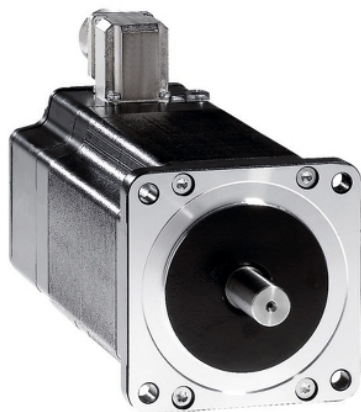


# BRS39BW460FCA

3-phase stepper motor - 6.78 Nm - shaft Ø 14 mm - L=128 mm - with brake - conn



## 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  | 60 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             | 22 cm     |
| Package 1 Width              | 19 cm     |
| Package 1 Length             | 40 cm     |
| Package 1 Weight             | 6.131 kg  |
| Unit Type of Package 2       | S06       |
| Number of Units in Package 2 | 6         |
| Package 2 Height             | 73.5 cm   |
| Package 2 Width              | 60 cm     |
| Package 2 Length             | 80 cm     |
| Package 2 Weight             | 49.786 kg |
| Unit Type of Package 3       | P06       |
| Number of Units in Package 3 | 12        |
| Package 3 Height             | 77 cm     |
| Package 3 Width              | 80 cm     |
| Package 3 Length             | 60 cm     |
| Package 3 Weight             | 82.072 kg |

## Offer Sustainability

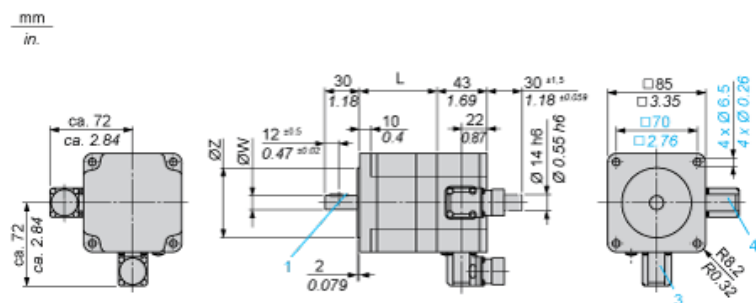
|                            |                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                             |
| REACH Regulation           |  <a href="#">REACH Declaration</a>             |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)                                                                        |
| Mercury free               | Yes                                                                                                                               |
| China RoHS Regulation      |  <a href="#">China RoHS Declaration</a>        |
| RoHS exemption information |  <a href="#">Yes</a>                           |
| Environmental Disclosure   |  <a href="#">Product Environmental Profile</a> |
| Circularity Profile        | No need of specific recycling operations                                                                                          |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins       |
| PVC free                   | Yes                                                                                                                               |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

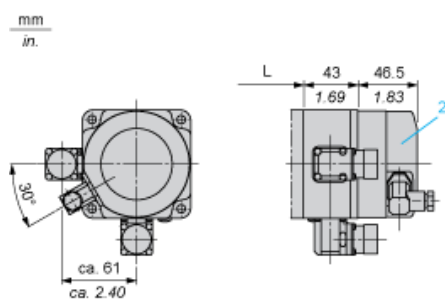
## Dimensions

### 3-Phase Stepper Motor in Connector Version



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

### Holding Brake



- 2 : Holding brake (optional)

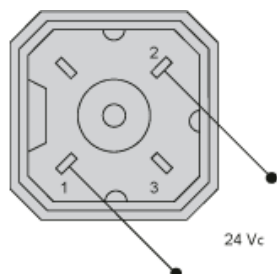
Dimensions in mm

| L                   | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) |
|---------------------|-------------------|--------------------|---------------------------|
| 127.5 (+0.6) (-0.8) | 14 h6             | 60 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           | 2.36 h8            | 0.20 x 0.25               |

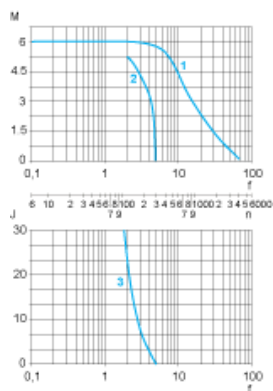
## Wiring Diagram of Holding Brake



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

## 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