



## 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     | 325 V DC<br>230 V AC  |
| Mounting support          | Flange                |
| Motor flange size         | 85 mm                 |
| Length                    | 171 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                                                                                                                                                                               |
| Feedback type                         | Single turn encoder                                                                                                                                                                     |
| Speed feedback resolution             | 10000 points/turn                                                                                                                                                                       |
| 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                            | 200, 400, 500, 1000, 2000, 4000, 5000, 10000 steps number of full steps per revolution<br>1.8 °, 0.9 °, 0.72 °, 0.36 °, 0.18 °, 0.09 °, 0.072 °, 0.036 ° step angle<br>1000 points/turn |
| 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               | 50 N (second shaft end)<br>110 N (first shaft end)                                                                                                                                      |
| Maximum axial force Fa                | 30 N (force pressure)<br>175 N (tensile force)                                                                                                                                          |
| Service life in hours                 | 20000 h (bearing)                                                                                                                                                                       |

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|                      |                           |
|----------------------|---------------------------|
| Angular acceleration | 200000 rad/s <sup>2</sup> |
| Product weight       | 4.3 kg                    |

## Environment

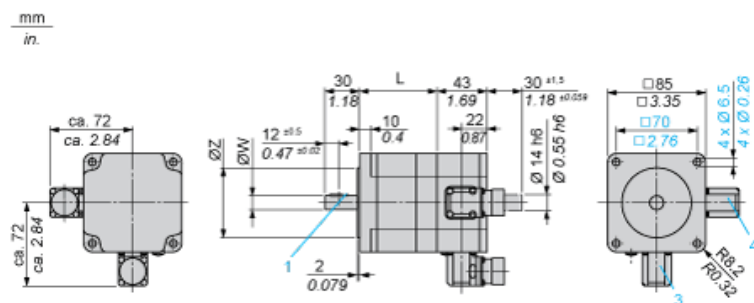
|                                       |                                                                                                                         |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Standards                             | EN 50347<br>IEC 60072-1                                                                                                 |
| 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                  | A conforming to EN/IEC 60034-14<br>20 m/s <sup>2</sup> maximum                                                          |
| IP degree of protection               | IP56 for total except shaft bushing conforming to EN/IEC 60034-5<br>IP41 for shaft bushing conforming to EN/IEC 60034-5 |
| Temperature class                     | F class winding conforming to IEC/EN 60034-1                                                                            |

## Offer Sustainability

|                                  |                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------|
| Sustainable offer status         | Green Premium product                                                                 |
| RoHS (date code: YYWW)           | Compliant - since 0623 - <a href="#">Schneider Electric declaration of conformity</a> |
| REACH                            | Reference not containing SVHC above the threshold                                     |
| Product environmental profile    | Available <a href="#">Download Product Environmental</a>                              |
| Product end of life instructions | Need no specific recycling operations                                                 |

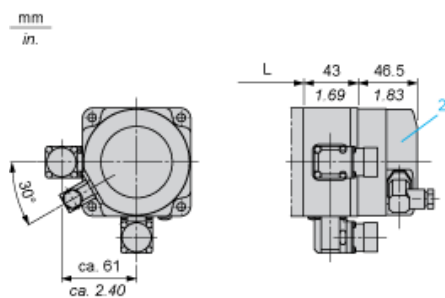
## Dimensions

### 3-Phase Stepper Motor in Connector Version



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

### Holding Brake



- 2 : Holding brake (optional)

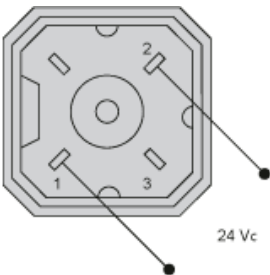
Dimensions in mm

| 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.

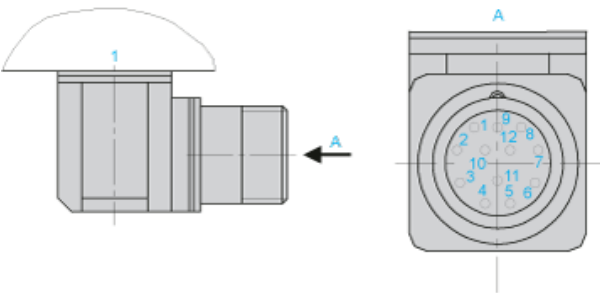
| L                      | Shaft diameter ØW | Centring collar ØZ | Woodruff key DIN 6888 (1) |
|------------------------|-------------------|--------------------|---------------------------|
| 5.02 (+0.023) (-0.031) | 0.55 h6           | 2.36 h8            | 0.20 x 0.25               |

Wiring Diagram of Holding Brake



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

Wiring Diagram of Encoder Plug on BRS3••

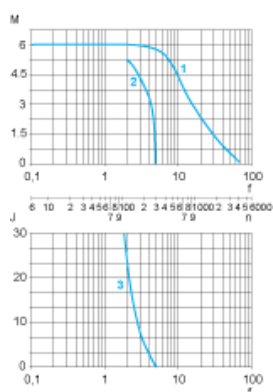


1 : Motor housing

| Pin | Designation          |
|-----|----------------------|
| 1   | A                    |
| 2   | A negated            |
| 3   | B                    |
| 4   | B negated            |
| 5   | C, I                 |
| 6   | C negated, I negated |
| 7   | 5 V <sub>GND</sub>   |
| 8   | + 5                  |
| 9   | -SENSE               |
| 10  | +SENSE               |
| 11  | Temperature sensor   |
| 12  | Not connected        |

## 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