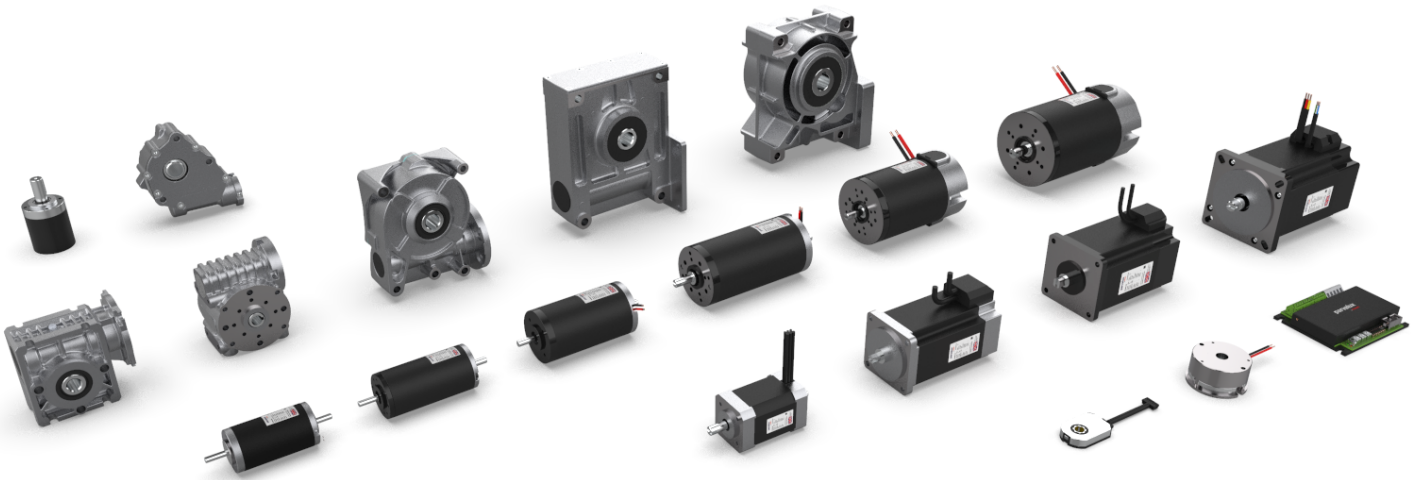


# Modular Range

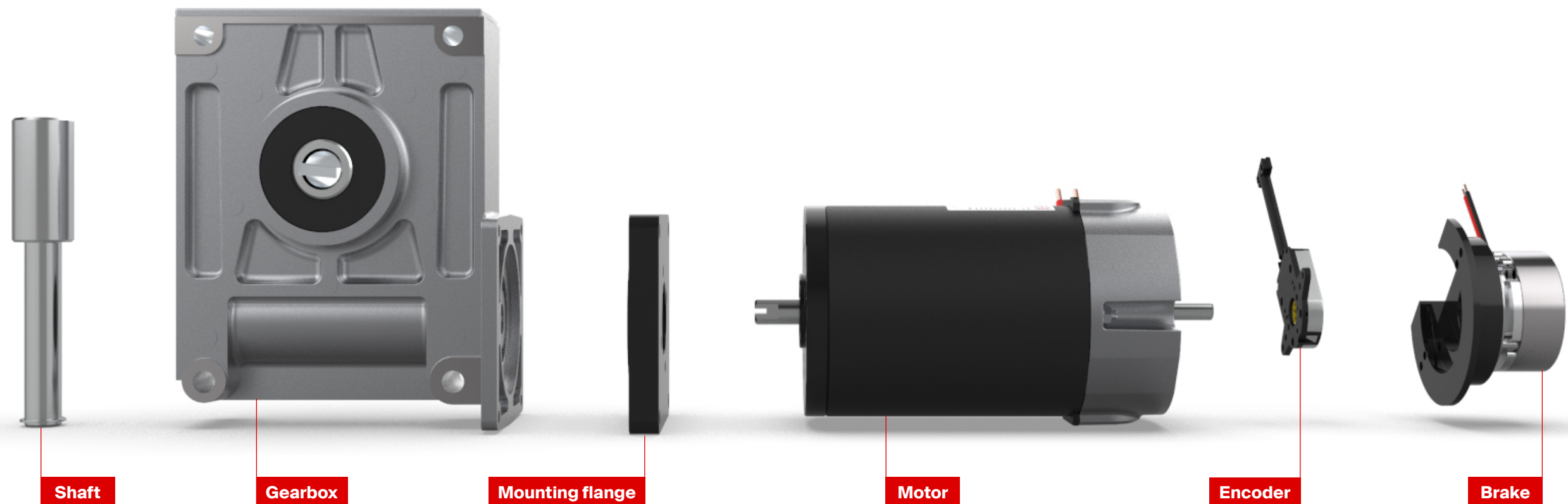
**2026**



***We know how to move***

# product out the door within 72 hours

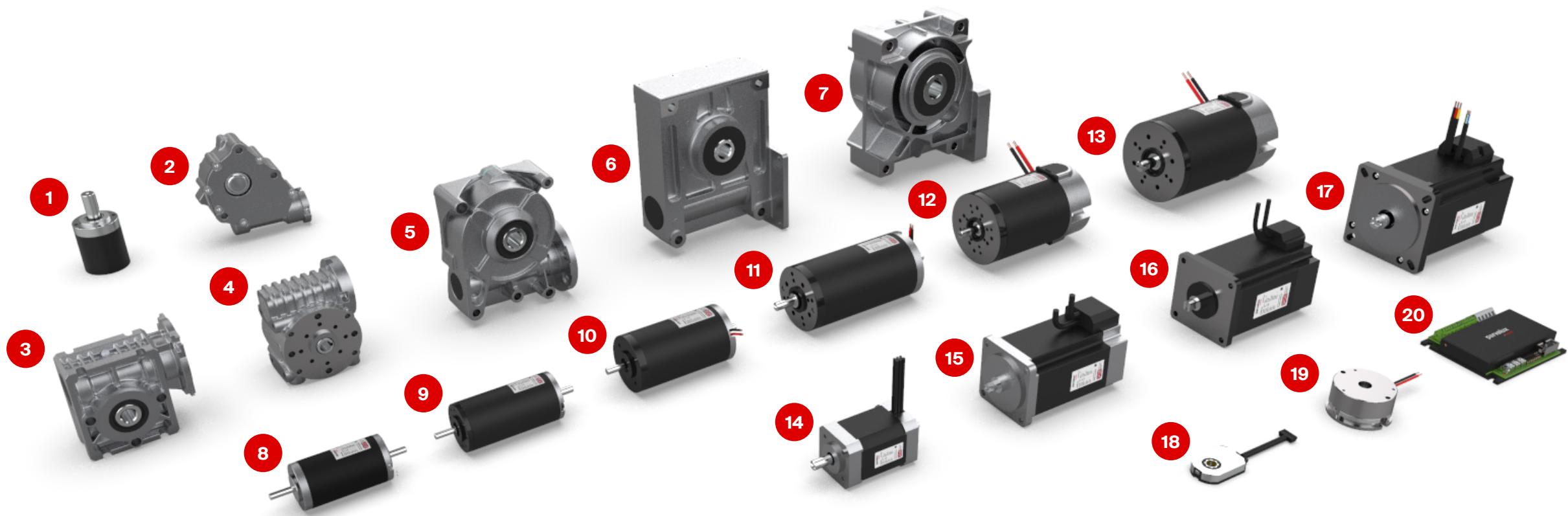
Featuring both brushed and brushless motors, an ever-expanding range of gearboxes, and a selection of accessories to fine tune your configuration, the **Parvalux modular range** offers a rapid route to proof-of-concept with orders shipped within 72 hours of confirmation.



# Contents

Visit [parvalux.com/modular-range](https://parvalux.com/modular-range) to start building your modular solution

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|   |       |    |    |       |         |
|---|-------|----|----|-------|---------|
| 1 | PGx42 | 80 | 6  | GB9   | 78      |
| 2 | GB56  | 77 | 7  | GB65  | 79      |
| 3 | GB28  | 74 | 8  | RE38  | 40 - 43 |
| 4 | GB80  | 75 | 9  | BRx42 | 44 - 47 |
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|    |       |         |    |            |           |
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| 11 | BRx63 | 52 - 55 | 16 | PBL70      | 32 - 35   |
| 12 | BRx70 | 56 - 59 | 17 | PBL86      | 36 - 39   |
| 13 | BRx90 | 60 - 63 | 18 | Encoders   | 116 - 117 |
| 14 | PBL42 | 24 - 27 | 19 | Brake      | 118       |
| 15 | PBL60 | 28 - 31 | 20 | Controller | 120 - 121 |

# Easy as one.two.three.



## Need help?

Our expert team of engineers have extensive experience in specifying Parvalux products for a wide range of applications. Contact your local sales engineer, found on page 134, if you require any assistance.

## Step 1.

Determine your required output performance.

Every application can vary, however the main factors to consider when selecting a motor-gearbox combination are voltage, speed, and torque.

Our modular range caters for voltages of 12 - 48V, up to 4500 rpm speed, and between 0.038 - 176.4 Nm of torque.

## Step 2.

Select your motor and gearbox combination.

Gearboxes enable you to reduce the output speed of your motor, whilst also increasing the torque. However, we also offer motor only solutions where very high speed and low torque is required.

Further details on the output performance of each combination within the modular range can be found throughout the rest of this guide.

## Step 3.

Fine tune your selection and order your modular solution.

Our range of accessories include brakes, encoders, controllers, and shaft extension kits, enabling you to tailor your selection to your application.

Once you've created a solution that matches your requirements, contact the Parvalux team to order in quantities of up to 10 pieces.

## Start building!



Scan the QR code to start building your own modular solution using our online configurator

# Modular matrix

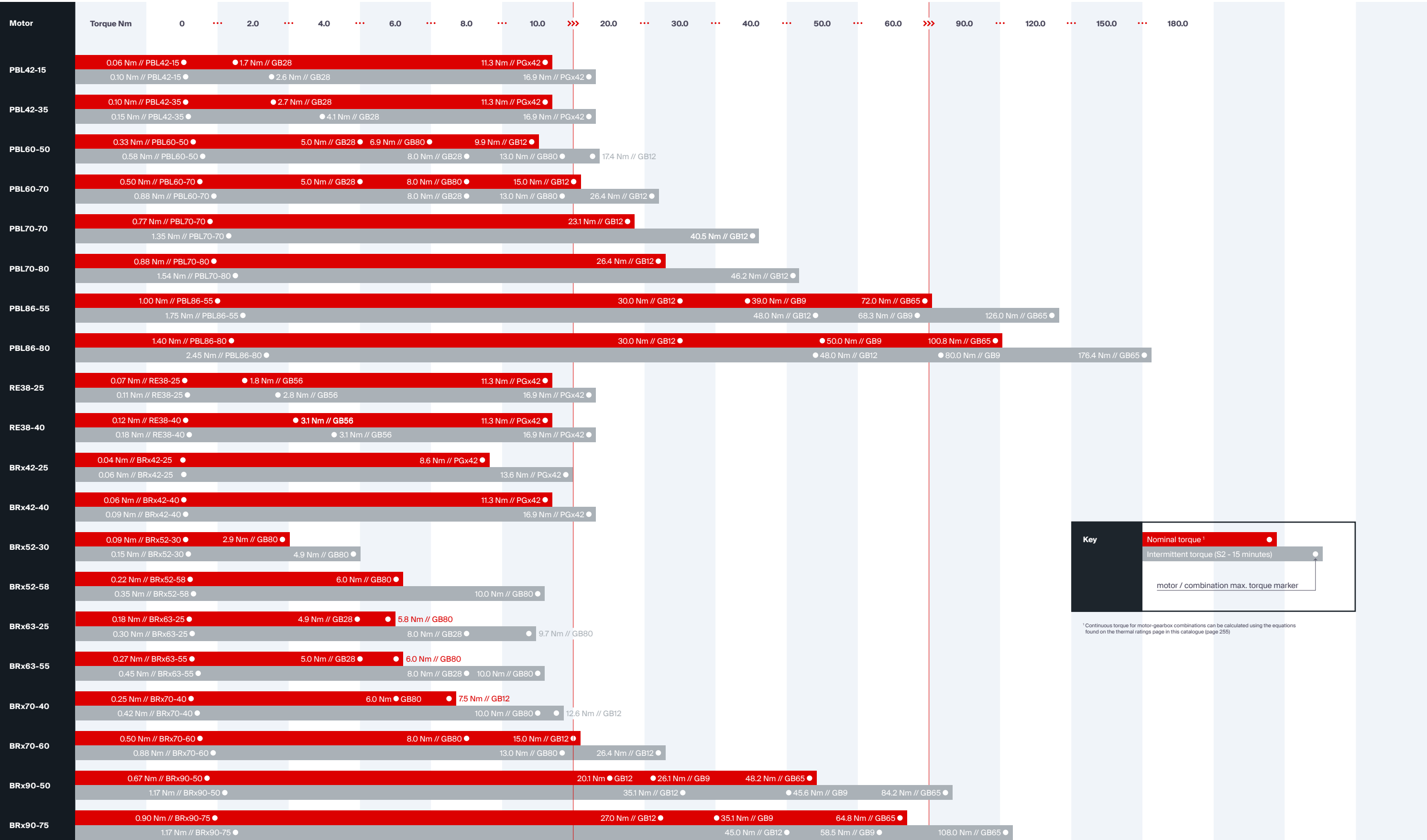
The table below displays a cross-reference of the modular range - which motors can be combined with which gearboxes, as well as which accessories are available across our modular combinations.

| Motor     | Gearbox |        |        |      |        |        |        | Accessories |        |             |            |
|-----------|---------|--------|--------|------|--------|--------|--------|-------------|--------|-------------|------------|
|           | GB28    | GB80   | GB12   | GB56 | GB9    | GB65   | PGx42  | Encoder     | Brake  | Enc + Brake | Controller |
| PBL42     | 781249  |        |        |      |        |        | 875216 | 781280      |        |             | ---        |
| PBL60     | 781251  | 854740 | 781252 |      |        |        |        | ---         | ---    | 781281      | ---        |
| PBL70     |         |        | 781255 |      |        |        |        | ---         | ---    | 781281      | ---        |
| PBL86     |         |        | 781260 |      | 781261 | 781261 |        | ---         | ---    | 781284      | ---        |
| RE38      |         |        |        | ---  |        |        | 865932 | 781275      |        |             | ---        |
| BRx42     |         |        |        |      |        |        | 865932 | 781275      |        |             | ---        |
| BRx52     |         | 854737 |        |      |        |        |        | 837660      |        |             | ---        |
| BRx63     | 781239  | 854739 |        |      |        |        |        | 781276      | 781276 | 865630      | ---        |
| BRx70     |         | 854737 | 781242 |      |        |        |        | ---         | ---    | 781277      | ---        |
| BRx90     |         |        | 781244 |      | 781247 | 781247 |        | ---         | ---    | 781279      | ---        |
| Shaft kit | 735908  | 860809 | 735903 |      | 735898 |        | 854742 |             |        |             |            |

| Key | ##### | Compatible combination (##### = mounting flange part number)   | ##### | Compatible accessory (##### = mounting flange part number)                |
|-----|-------|----------------------------------------------------------------|-------|---------------------------------------------------------------------------|
|     | ##### | Compatible shaft extension kit (##### = shaft kit part number) | ---   | Compatible accessory (--- = no mounting flange needed between components) |

# Modular Selection Guide

Quickview of the torque output of the modular range combinations



Key

Nominal torque <sup>1</sup>

Intermittent torque (S2 - 15 minutes)

motor / combination max. torque marker

<sup>1</sup> Continuous torque for motor-gearbox combinations can be calculated using the equations found on the thermal ratings page in this catalogue (page 255)

# Modular motors

Available as motor-only or combined with a gearbox, our modular motor range includes both BLDC and PMDC variants, varying options for frame size, stack length and voltage, and can be combined with a number of our modular accessories to fine tune your modular configuration to your exact specification.

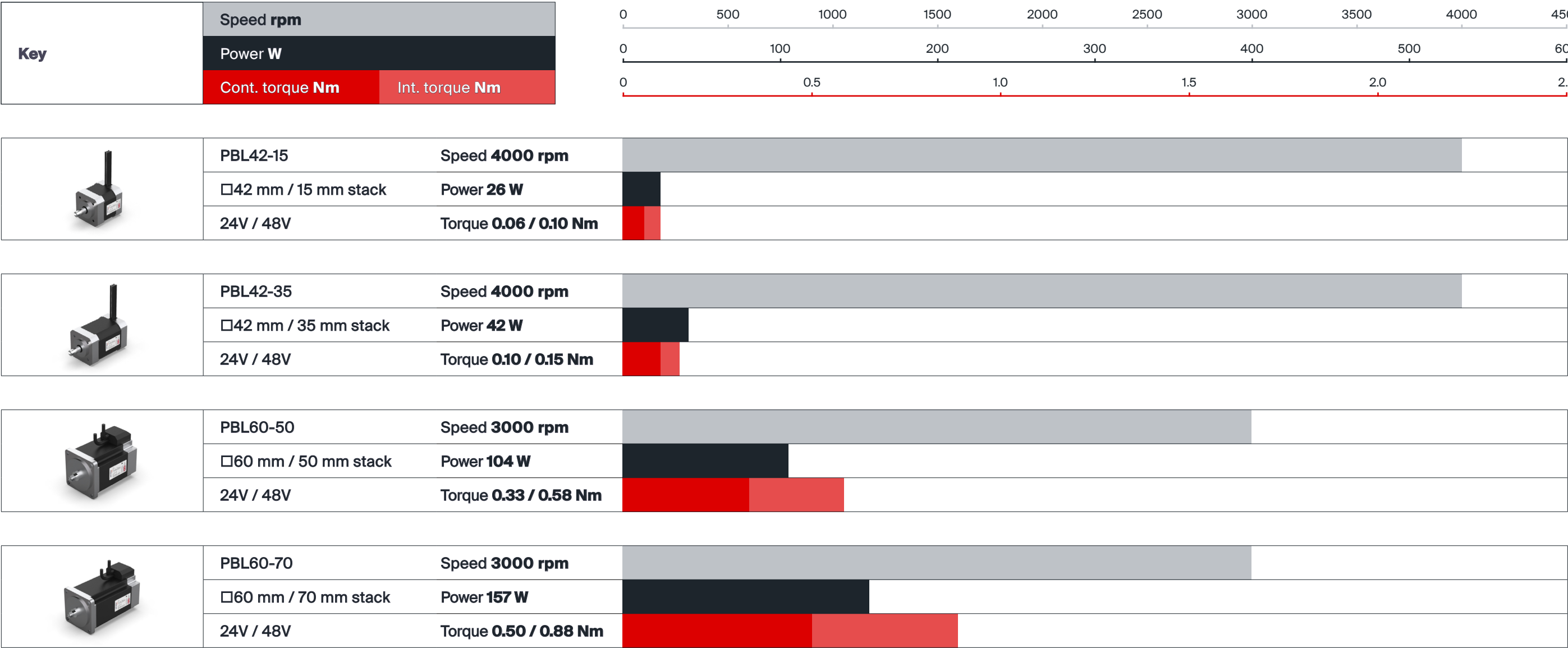
Explore the range over the next few pages or scan the QR code to view the range online and begin building your modular range solution.



Overview

# BLDC motors

Our range of BLDC modular motors includes 4 different frame sizes, each of which is available in 2 different stack lengths. Use the tables below to quickly compare the specifications of the different motors or take a look at the individual datasheets of each motor to discover their full specifications.



Overview

# BLDC motors

Our range of BLDC modular motors includes 4 different frame sizes, each of which is available in 2 different stack lengths. Use the tables below to quickly compare the specifications of the different motors or take a look at the individual datasheets of each motor to discover their full specifications.

|     |                 |                |   |     |      |      |      |      |      |      |      |      |
|-----|-----------------|----------------|---|-----|------|------|------|------|------|------|------|------|
| Key | Speed rpm       |                | 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 |
|     | Power W         |                | 0 | 100 | 200  | 300  | 400  | 500  | 600  |      |      |      |
|     | Cont. torque Nm | Int. torque Nm | 0 | 0.5 | 1.0  | 1.5  | 2.0  | 2.5  |      |      |      |      |

|                                                                                    |                      |                              |  |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------|----------------------|------------------------------|--|--|--|--|--|--|--|--|--|--|
|  | PBL70-70             | Speed <b>4500 rpm</b>        |  |  |  |  |  |  |  |  |  |  |
|                                                                                    | □70 mm / 70 mm stack | Power <b>363 W</b>           |  |  |  |  |  |  |  |  |  |  |
|                                                                                    | 48V                  | Torque <b>0.77 / 1.35 Nm</b> |  |  |  |  |  |  |  |  |  |  |

|                                                                                     |                      |                              |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------|----------------------|------------------------------|--|--|--|--|--|--|--|--|--|--|
|  | PBL70-80             | Speed <b>4500 rpm</b>        |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | □70 mm / 80 mm stack | Power <b>415 W</b>           |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | 48V                  | Torque <b>0.88 / 1.54 Nm</b> |  |  |  |  |  |  |  |  |  |  |

|                                                                                     |                      |                              |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------|----------------------|------------------------------|--|--|--|--|--|--|--|--|--|--|
|  | PBL86-55             | Speed <b>4000 rpm</b>        |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | □80 mm / 55 mm stack | Power <b>419 W</b>           |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | 48V                  | Torque <b>1.00 / 1.75 Nm</b> |  |  |  |  |  |  |  |  |  |  |

|                                                                                     |                      |                              |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------|----------------------|------------------------------|--|--|--|--|--|--|--|--|--|--|
|  | PBL86-80             | Speed <b>4000 rpm</b>        |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | □80 mm / 80 mm stack | Power <b>586 W</b>           |  |  |  |  |  |  |  |  |  |  |
|                                                                                     | 48V                  | Torque <b>1.40 / 2.45 Nm</b> |  |  |  |  |  |  |  |  |  |  |

Overview

# PMDC motors

Our range of PMDC modular motors includes 6 different frame sizes, each of which is available in 2 different stack lengths. Use the tables below to quickly compare the specifications of the different motors or take a look at the individual datasheets of each motor to discover their full specifications.

|     |           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| Key | Speed rpm |  | 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Overview

# PMDC motors

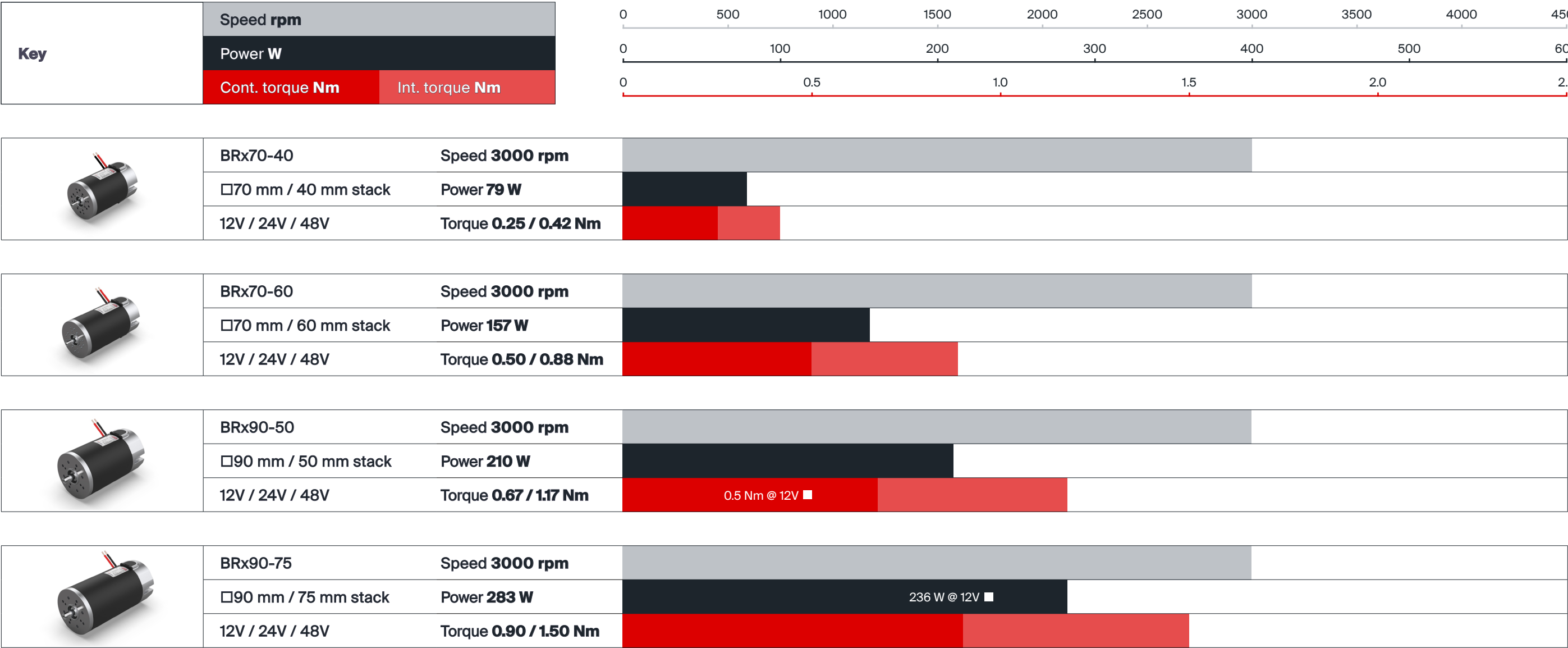
Our range of PMDC modular motors includes 6 different frame sizes, each of which is available in 2 different stack lengths. Use the tables below to quickly compare the specifications of the different motors or take a look at the individual datasheets of each motor to discover their full specifications.

| Key                                                                                 | Speed rpm            |                       | 050010001500200025003000350040004500 |  |
|-------------------------------------------------------------------------------------|----------------------|-----------------------|--------------------------------------|--|
|                                                                                     | Power W              |                       | 0100200300400500600                  |  |
|                                                                                     | Cont. torque Nm      | Int. torque Nm        | 00.51.01.52.02.5                     |  |
|   | BRx52-30             | Speed 3000 rpm        |                                      |  |
|                                                                                     | □52 mm / 30 mm stack | Power 28 W            |                                      |  |
|                                                                                     | 12V / 24V / 48V      | Torque 0.09 / 0.15 Nm |                                      |  |
|  | BRx52-58             | Speed 3000 rpm        |                                      |  |
|                                                                                     | □52 mm / 58 mm stack | Power 69 W            |                                      |  |
|                                                                                     | 12V / 24V / 48V      | Torque 0.22 / 0.35 Nm |                                      |  |
|  | BRx63-25             | Speed 3000 rpm        | 2500 rpm @ 12V ■                     |  |
|                                                                                     | □63 mm / 25 mm stack | Power 57 W            |                                      |  |
|                                                                                     | 12V / 24V / 48V      | Torque 0.18 / 0.30 Nm |                                      |  |
|  | BRx63-55             | Speed 3000 rpm        | 2800 rpm @ 12V ■                     |  |
|                                                                                     | □63 mm / 55 mm stack | Power 85 W            |                                      |  |
|                                                                                     | 12V / 24V / 48V      | Torque 0.27 / 0.45 Nm |                                      |  |

Overview

# PMDC motors

Our range of PMDC modular motors includes 6 different frame sizes, each of which is available in 2 different stack lengths. Use the tables below to quickly compare the specifications of the different motors or take a look at the individual datasheets of each motor to discover their full specifications.

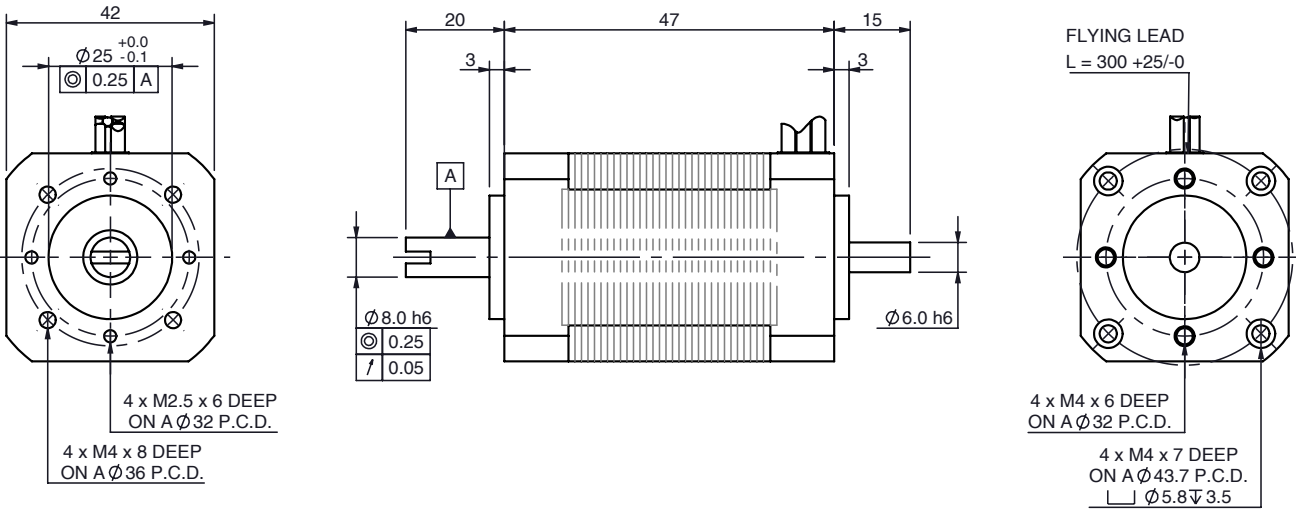


PBL42-15

BLDC motor

Ø42 mm frame // 15 mm stack

all dimensions in mm



| Part number key                             |                   |                        |                        |                                                           |
|---------------------------------------------|-------------------|------------------------|------------------------|-----------------------------------------------------------|
| Modular                                     | #####             |                        |                        |                                                           |
| Standard                                    | #####             |                        |                        |                                                           |
| Calculated data                             | #####             |                        |                        |                                                           |
| Technical data                              |                   |                        |                        | Connection details                                        |
| 1 Part number                               |                   | 776614                 | 776615                 | Lead colourLead gaugeFunction                             |
| 2 Nominal power                             | W                 | 26                     | 26                     | RedUL1569/26 AWGVCC                                       |
| 3 Nominal voltage                           | V                 | 24                     | 48                     | BlackUL1569/26 AWGGND                                     |
| 4 No load speed                             | rpm               | 6068                   | 6227                   | YellowUL1569/26 AWGHall A                                 |
| 5 No load current                           | A                 | 0.4                    | 0.3                    | GreenUL1569/26 AWGHall B                                  |
| 6 Nominal speed                             | rpm               | 4000                   | 4000                   | BlueUL1569/26 AWGHall C                                   |
| 7 Nominal continuous torque (S1)            | Nm                | 0.063                  | 0.063                  | YellowUL1569/20 AWGPhase U                                |
| 8 Nominal continuous current (S1)           | A                 | 1.8                    | 1.0                    | GreenUL1569/20 AWGPhase V                                 |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 0.095                  | 0.095                  | BlueUL1569/20 AWGPhase W                                  |
| 10 Stall current                            | A                 | 6.50                   | 3.34                   |                                                           |
| 11 Stall torque                             | Nm                | 0.21                   | 0.21                   |                                                           |
| 12 Stack length                             | mm                | 15                     | 15                     |                                                           |
| 13 Maximum efficiency                       | %                 | 75                     | 75                     |                                                           |
| 14 Ra                                       | Ω                 | 1.8                    | 7.1                    |                                                           |
| 15 Ri                                       | mH                | 2.23                   | 0.91                   |                                                           |
| 16 Speed constant                           | rpm/V             | 230.4                  | 142.0                  |                                                           |
| 17 Torque constant                          | Nm/A              | 0.032                  | 0.070                  |                                                           |
| 18 Speed torque gradient                    | rpm/Nm            | 28152                  | 29351                  |                                                           |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 3.3 x 10 <sup>-6</sup> | 3.3 x 10 <sup>-6</sup> |                                                           |
| 20 Weight                                   | Kg                | 0.30                   | 0.30                   |                                                           |
| Thermal data                                |                   |                        |                        | Compatible products                                       |
| 22 Ambient temperature                      | °C                | 40                     |                        |                                                           |
| Mechanical data                             |                   |                        |                        |                                                           |
| 23 Radial load [distance from flange]       | N [mm]            | 130 [15]               |                        | GearboxPage #GB2874PGx4280                                |
| 24 Radial play                              | mm [°g]           | 0.06 [450]             |                        | EncoderPage #Incr. 5-pin116Incr. 10-pin116Diff. 10-pin117 |
| 25 Axial end play                           | mm [°g]           | 0.06 [450]             |                        | ControllerPage #SC 50/15120                               |
| Other data                                  |                   |                        |                        |                                                           |
| 26 Number of poles                          |                   | 8                      |                        |                                                           |
| 27 Winding type                             |                   | Delta                  |                        |                                                           |
| 28 Hall effect angle (electrical angle)     | °                 | 120                    |                        |                                                           |
| 29 IP Rating                                |                   | IP54                   |                        |                                                           |
| 30 Enclosure                                |                   | Enclosed               |                        |                                                           |
| 31 Insulation Class                         |                   | B                      |                        |                                                           |

PBL42-15 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data                   |        |         |        |        |
|---------------------|--|----------------------------------|--------|---------|--------|--------|
| PBL42-15-GB28       |  | Gear material                    | Bronze |         | Bronze |        |
|                     |  | Gear ratio <sup>1</sup>          | :1     | 4       | 30     | 70     |
|                     |  | Speed                            | rpm    | 267     | 133    | 67     |
|                     |  | Nominal torque                   | Nm     | 0.7     | 1.2    | 1.7    |
|                     |  | Intermittent torque              | Nm     | 1.1     | 1.9    | 2.6    |
| PBL42-15-PGx42      |  | Gear material                    | Steel  |         | Steel  |        |
|                     |  | Gear ratio [stages] <sup>1</sup> | :1     | 4.3 [1] | 19 [2] | 66 [3] |
|                     |  | Speed                            | rpm    | 930     | 211    | 61     |
|                     |  | Nominal torque                   | Nm     | 0.2     | 1.0    | 3.0    |
|                     |  | Intermittent torque              | Nm     | 0.4     | 1.5    | 4.5    |

Key

Modular combination / modular gear ratio

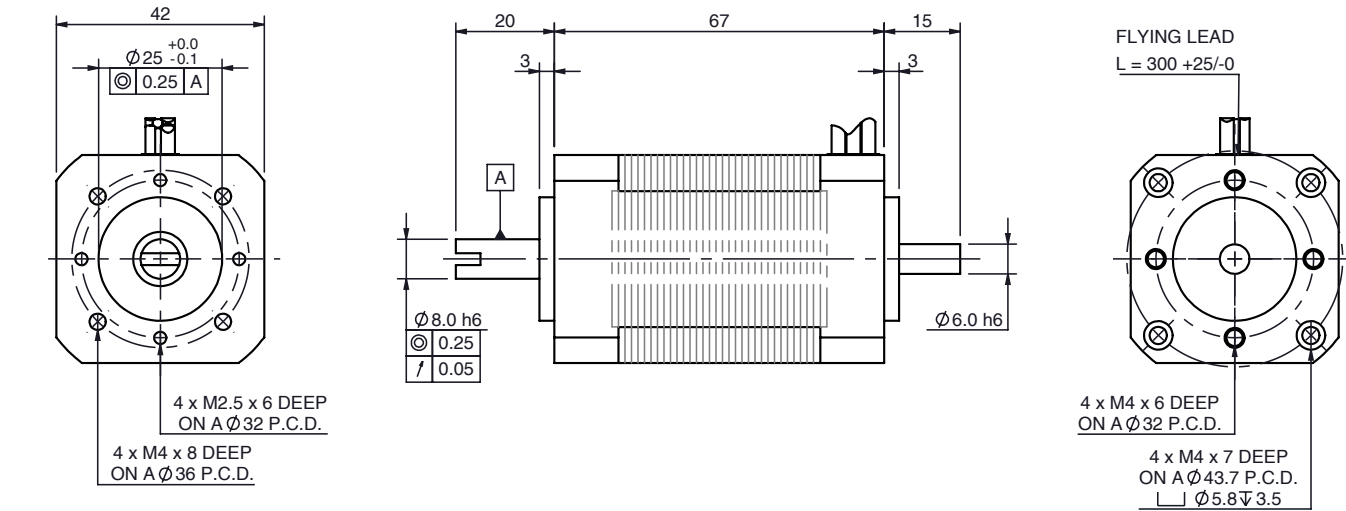
Notes

<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on PBL42-15 48V 4000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

PBL42-35 BLDC motor

Ø42 mm frame // 35 mm stack



| Part number key                             |                   |                        |                        |                                                           |
|---------------------------------------------|-------------------|------------------------|------------------------|-----------------------------------------------------------|
| Modular                                     | #####             |                        |                        |                                                           |
| Standard                                    | #####             |                        |                        |                                                           |
| Calculated data                             | #####             |                        |                        |                                                           |
| Technical data                              |                   |                        |                        | Connection details                                        |
| 1 Part number                               |                   | 776616                 | 776617                 | Lead colour   Lead gauge   Function                       |
| 2 Nominal power                             | W                 | 42                     | 42                     | Red   UL1569/26 AWG   VCC                                 |
| 3 Nominal voltage                           | V                 | 24                     | 48                     | Black   UL1569/26 AWG   GND                               |
| 4 No load speed                             | rpm               | 5835                   | 6001                   | Yellow   UL1569/26 AWG   Hall A                           |
| 5 No load current                           | A                 | 0.4                    | 0.3                    | Green   UL1569/26 AWG   Hall B                            |
| 6 Nominal speed                             | rpm               | 4000                   | 4000                   | Blue   UL1569/26 AWG   Hall C                             |
| 7 Nominal continuous torque (S1)            | Nm                | 0.10                   | 0.10                   | Yellow   UL1569/20 AWG   Phase U                          |
| 8 Nominal continuous current (S1)           | A                 | 2.6                    | 1.3                    | Green   UL1569/20 AWG   Phase V                           |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 0.15                   | 0.15                   | Blue   UL1569/20 AWG   Phase W                            |
| 10 Stall current                            | A                 | 9.6                    | 5.0                    |                                                           |
| 11 Stall torque                             | Nm                | 0.4                    | 0.4                    |                                                           |
| 12 Stack length                             | mm                | 35                     | 35                     |                                                           |
| 13 Maximum efficiency                       | %                 | 77                     | 75                     |                                                           |
| 14 Ra                                       | Ω                 | 0.87                   | 3.35                   |                                                           |
| 15 Ri                                       | mH                | 1.30                   | 5.41                   |                                                           |
| 16 Speed constant                           | rpm/V             | 251.7                  | 132.2                  |                                                           |
| 17 Torque constant                          | Nm/A              | 0.043                  | 0.093                  |                                                           |
| 18 Speed torque gradient                    | rpm/Nm            | 14157                  | 13361                  |                                                           |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 5.5 x 10 <sup>-6</sup> | 5.5 x 10 <sup>-6</sup> |                                                           |
| 20 Weight                                   | Kg                | 0.45                   | 0.45                   |                                                           |
| Thermal data                                |                   |                        |                        | Compatible products                                       |
| 22 Ambient temperature                      | °C                | 40                     |                        |                                                           |
| Mechanical data                             |                   |                        |                        |                                                           |
| 23 Radial load [distance from flange]       | N [mm]            | 130 [15]               |                        | Gearbox   Page #   Encoder   Page #   Controller   Page # |
| 24 Radial play                              | mm [@g]           | 0.06 [450]             |                        | GB28   74   Incr. 5-pin   116   SC 50/15   120            |
| 25 Axial end play                           | mm [@g]           | 0.06 [450]             |                        | PGx42   80   Incr. 10-pin   116                           |
| Other data                                  |                   |                        |                        | Diff. 10-pin   117                                        |
| 26 Number of poles                          |                   | 8                      |                        |                                                           |
| 27 Winding type                             |                   | Delta                  |                        |                                                           |
| 28 Hall effect angle (electrical angle)     | °                 | 120                    |                        |                                                           |
| 29 IP Rating                                |                   | IP54                   |                        |                                                           |
| 30 Enclosure                                |                   | Enclosed               |                        |                                                           |
| 31 Insulation Class                         |                   | B                      |                        |                                                           |

PBL42-35 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data                   |        |         |        |                            |
|---------------------|--|----------------------------------|--------|---------|--------|----------------------------|
| PBL42-35-GB28       |  | Gear material                    | Bronze |         | Bronze |                            |
|                     |  | Gear ratio <sup>1</sup>          | :1     | 15      | 30     | 60                         |
|                     |  | Speed                            | rpm    | 267     | 133    | 67                         |
|                     |  | Nominal torque                   | Nm     | 1.1     | 2.0    | 2.7                        |
|                     |  | Intermittent torque              | Nm     | 1.7     | 2.9    | 4.1                        |
| PBL42-35-PGx42      |  | Gear material                    | Steel  |         | Steel  |                            |
|                     |  | Gear ratio [stages] <sup>1</sup> | :1     | 4.3 [1] | 19 [2] | 66 [3]   150 [4]   353 [4] |
|                     |  | Speed                            | rpm    | 930     | 211    | 61   27   11               |
|                     |  | Nominal torque                   | Nm     | 0.4     | 1.5    | 4.8   9.6   11.3           |
|                     |  | Intermittent torque              | Nm     | 0.6     | 2.3    | 7.1   14.4   16.9          |

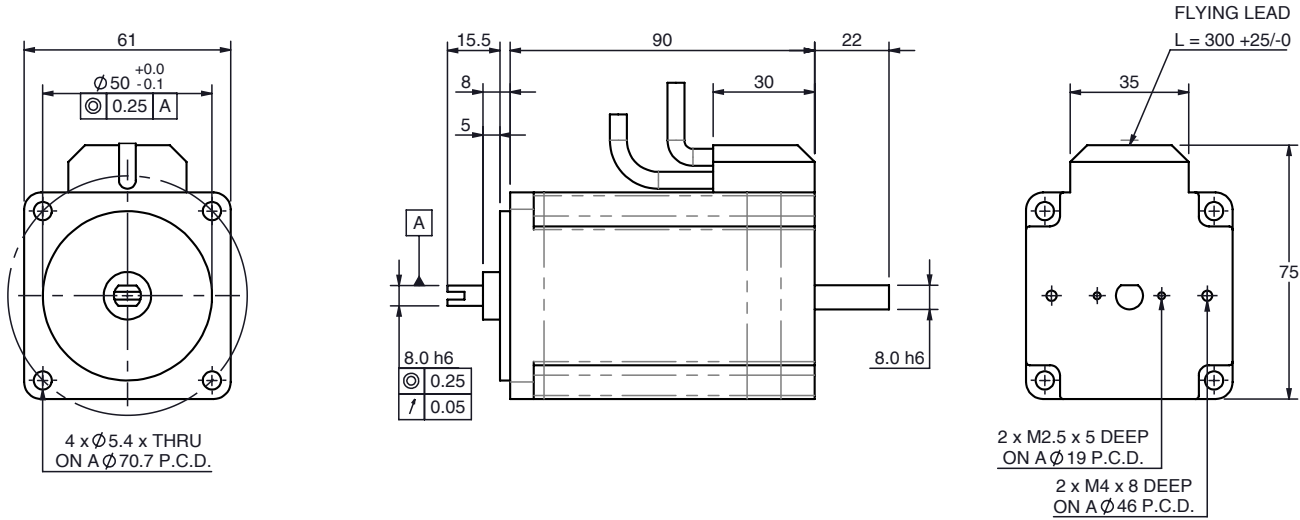
| Key                                      | Notes                                                                                                                   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com |

- Technical data displayed above calculated based on **PBL42-35 48V 4000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

PBL60-50 BLDC motor

Ø60 mm frame // 50 mm stack

all dimensions in mm



| Part number key                             |                   |                         |                         |                    |
|---------------------------------------------|-------------------|-------------------------|-------------------------|--------------------|
| Modular                                     | #####             |                         |                         |                    |
| Standard                                    | #####             |                         |                         |                    |
| Calculated data                             | #####             |                         |                         |                    |
| Technical data                              |                   |                         |                         | Connection details |
| 1 Part number                               |                   | 776618                  | 776619                  | Lead colour        |
| 2 Nominal power                             | W                 | 104                     | 104                     | Red                |
| 3 Nominal voltage                           | V                 | 24                      | 48                      | Black              |
| 4 No load speed                             | rpm               | 3798                    | 3827                    | Blue               |
| 5 No load current                           | A                 | 1.1                     | 0.5                     | Green              |
| 6 Nominal speed                             | rpm               | 3000                    | 3000                    | White              |
| 7 Nominal continuous torque (S1)            | Nm                | 0.33                    | 0.33                    | Red                |
| 8 Nominal continuous current (S1)           | A                 | 6.1                     | 3.0                     | Yellow             |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 0.58                    | 0.58                    | Black              |
| 10 Stall current                            | A                 | 41.00                   | 26.40                   |                    |
| 11 Stall torque                             | Nm                | 2.6                     | 3.4                     |                    |
| 12 Stack length                             | mm                | 50                      | 50                      |                    |
| 13 Maximum efficiency                       | %                 | 80                      | 84                      |                    |
| 14 Ra                                       | Ω                 | 0.202                   | 0.757                   |                    |
| 15 Ri                                       | mH                | 0.21                    | 0.86                    |                    |
| 16 Speed constant                           | rpm/V             | 159.6                   | 80.7                    |                    |
| 17 Torque constant                          | Nm/A              | 0.07                    | 0.13                    |                    |
| 18 Speed torque gradient                    | rpm/Nm            | 1502.6                  | 1152.9                  |                    |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 4.97 x 10 <sup>-6</sup> | 4.97 x 10 <sup>-6</sup> |                    |
| 20 Weight                                   | Kg                | 1.20                    | 1.20                    |                    |
| Compatible products                         |                   |                         |                         |                    |
| 21 Ambient temperature                      | °C                | 40                      |                         |                    |
| Mechanical data                             |                   | Gearbox                 | Page #                  | Brake              |
| 22 Radial load [distance from flange]       | N [mm]            | GB28                    | 74                      | 1.5 Nm             |
| 23 Radial play                              | mm [°g]           | GB80                    | 75                      |                    |
| 24 Axial end play                           | mm [°g]           | GB12                    | 76                      |                    |
| Other data                                  |                   | Encoder                 |                         |                    |
| 25 Number of poles                          |                   | Incr. 5-pin             | 116                     |                    |
| 26 Winding type                             |                   | Incr. 10-pin            | 116                     |                    |
| 27 Hall effect angle (electrical angle)     | °                 | Diff. 10-pin            | 117                     |                    |
| 28 IP Rating                                |                   |                         |                         |                    |
| 29 Enclosure                                |                   |                         |                         |                    |
| 30 Insulation Class                         |                   |                         |                         |                    |

PBL60-50 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data          |           |           |           |
|---------------------|--|-------------------------|-----------|-----------|-----------|
| PBL60-50-GB28       |  | Gear material           | Bronze    | Bronze    | Bronze    |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15        | 30        |
|                     |  | Speed                   | rpm       | 200       | 100       |
|                     |  | Nominal torque          | Nm        | 3.7       | 5.0       |
|                     |  | Intermittent torque     | Nm        | 6.5       | 8.0       |
| PBL60-50-GB80       |  | Gear material           | Composite | Composite | Composite |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15        | 30        |
|                     |  | Speed                   | rpm       | 200       | 100       |
|                     |  | Nominal torque          | Nm        | 3.8       | 6.9       |
|                     |  | Intermittent torque     | Nm        | 6.7       | 12.2      |
| PBL60-50-GB12       |  | Gear material           | Bronze    | Bronze    | Bronze    |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15        | 30        |
|                     |  | Speed                   | rpm       | 200       | 100       |
|                     |  | Nominal torque          | Nm        | 3.7       | 6.4       |
|                     |  | Intermittent torque     | Nm        | 6.5       | 11.3      |

Key

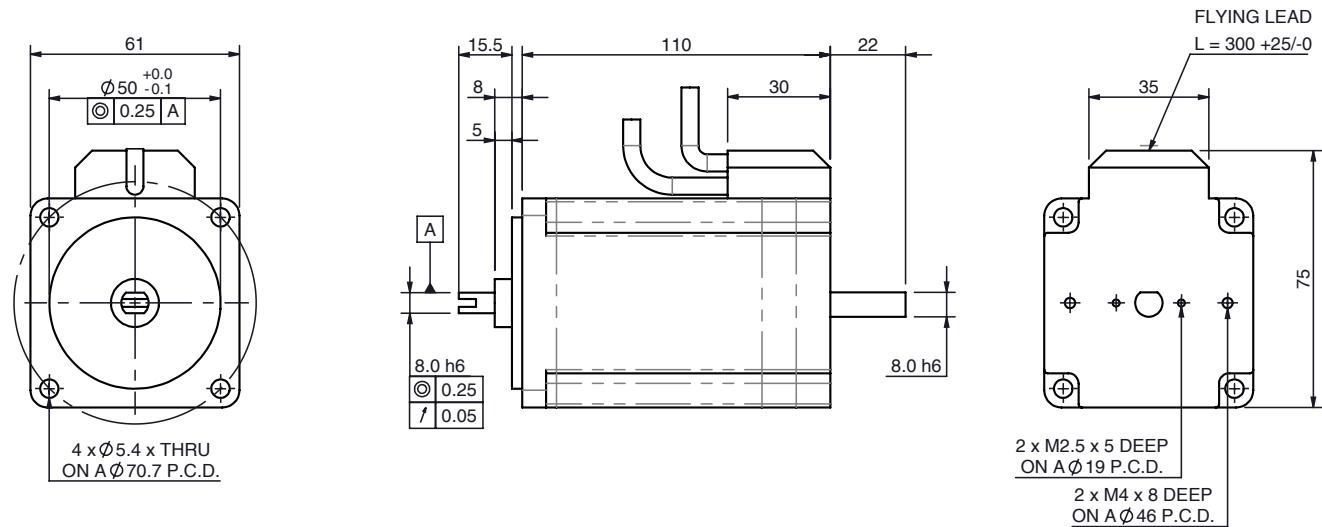
Modular combination / modular gear ratio

Notes

<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on **PBL60-50 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

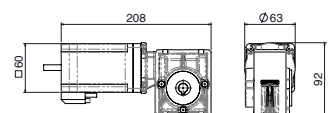
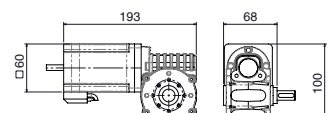
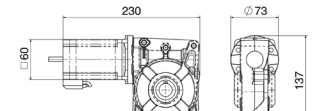
Ø60 mm frame // 70 mm stack



| Part number key                             |                   |                         |                         |          |
|---------------------------------------------|-------------------|-------------------------|-------------------------|----------|
| Modular                                     |                   | #####                   |                         |          |
| Standard                                    |                   | #####                   |                         |          |
| Calculated data                             |                   | #####                   |                         |          |
| Technical data                              |                   |                         |                         |          |
| 1 Part number                               |                   | 776620                  | 776621                  |          |
| 2 Nominal power                             | W                 | 157                     | 157                     |          |
| 3 Nominal voltage                           | V                 | 24                      | 48                      |          |
| 4 No load speed                             | rpm               | 3983                    | 3811                    |          |
| 5 No load current                           | A                 | 1.7                     | 0.7                     |          |
| 6 Nominal speed                             | rpm               | 3000                    | 3000                    |          |
| 7 Nominal continuous torque (S1)            | Nm                | 0.5                     | 0.5                     |          |
| 8 Nominal continuous current (S1)           | A                 | 9.9                     | 4.6                     |          |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 0.88                    | 0.88                    |          |
| 10 Stall current                            | A                 | 63.44                   | 36.90                   |          |
| 11 Stall torque                             | Nm                | 3.7                     | 4.5                     |          |
| 12 Stack length                             | mm                | 70                      | 70                      |          |
| 13 Maximum efficiency                       | %                 | 0.77                    | 0.83                    |          |
| 14 Ra                                       | Ω                 | 0.12                    | 0.48                    |          |
| 15 RI                                       | mH                | 0.12                    | 0.56                    |          |
| 16 Speed constant                           | rpm/V             | 167.30                  | 80.34                   |          |
| 17 Torque constant                          | Nm/A              | 0.06                    | 0.12                    |          |
| 18 Speed torque gradient                    | rpm/Nm            | 1121.90                 | 870.34                  |          |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 7.28 x 10 <sup>-5</sup> | 7.28 x 10 <sup>-5</sup> |          |
| 20 Weight                                   | Kg                | 1.60                    | 1.60                    |          |
|                                             |                   |                         |                         |          |
| Connection details                          |                   |                         |                         |          |
|                                             |                   | Lead colour             | Lead gauge              | Function |
|                                             |                   | Red                     | UL1007/26 AWG           | VCC      |
|                                             |                   | Black                   | UL1007/26 AWG           | GND      |
|                                             |                   | Blue                    | UL1007/26 AWG           | Hall A   |
|                                             |                   | Green                   | UL1007/26 AWG           | Hall B   |
|                                             |                   | White                   | UL1007/26 AWG           | Hall C   |
|                                             |                   | Red                     | UL1007/18 AWG           | Phase U  |
|                                             |                   | Yellow                  | UL1007/18 AWG           | Phase V  |
|                                             |                   | Black                   | UL1007/18 AWG           | Phase W  |
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## PBL60-70 combinations

Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data             |     |           |           |           |
|---------------------|-------------------------------------------------------------------------------------|----------------------------|-----|-----------|-----------|-----------|
| PBL60-70-GB28       |  | Gear material <sup>1</sup> |     | Bronze    | Bronze    | Bronze    |
|                     |                                                                                     | Gear ratio <sup>2</sup>    | :1  | 15        | 30        | 60        |
|                     |                                                                                     | Speed                      | rpm | 200       | 100       | 50        |
|                     |                                                                                     | Nominal torque             | Nm  | 5.0       | 5.0       | 5.0       |
|                     |                                                                                     | Intermittent torque        | Nm  | 8.0       | 8.0       | 8.0       |
| PBL60-70-GB80       |  | Gear material <sup>1</sup> |     | Composite | Composite | Composite |
|                     |                                                                                     | Gear ratio <sup>2</sup>    | :1  | 15        | 30        | 60        |
|                     |                                                                                     | Speed                      | rpm | 200       | 100       | 50        |
|                     |                                                                                     | Nominal torque             | Nm  | 5.8       | 8.0       | 6.0       |
|                     |                                                                                     | Intermittent torque        | Nm  | 10.2      | 13.0      | 10.0      |
| PBL60-70-GB12       |  | Gear material <sup>1</sup> |     | Bronze    | Bronze    | Bronze    |
|                     |                                                                                     | Gear ratio <sup>2</sup>    | :1  | 15        | 30        | 60        |
|                     |                                                                                     | Speed                      | rpm | 200       | 100       | 50        |
|                     |                                                                                     | Nominal torque             | Nm  | 5.6       | 9.8       | 15.0      |
|                     |                                                                                     | Intermittent torque        | Nm  | 9.9       | 17.2      | 26.4      |

### Key

### Modular combination / modular gear ratio

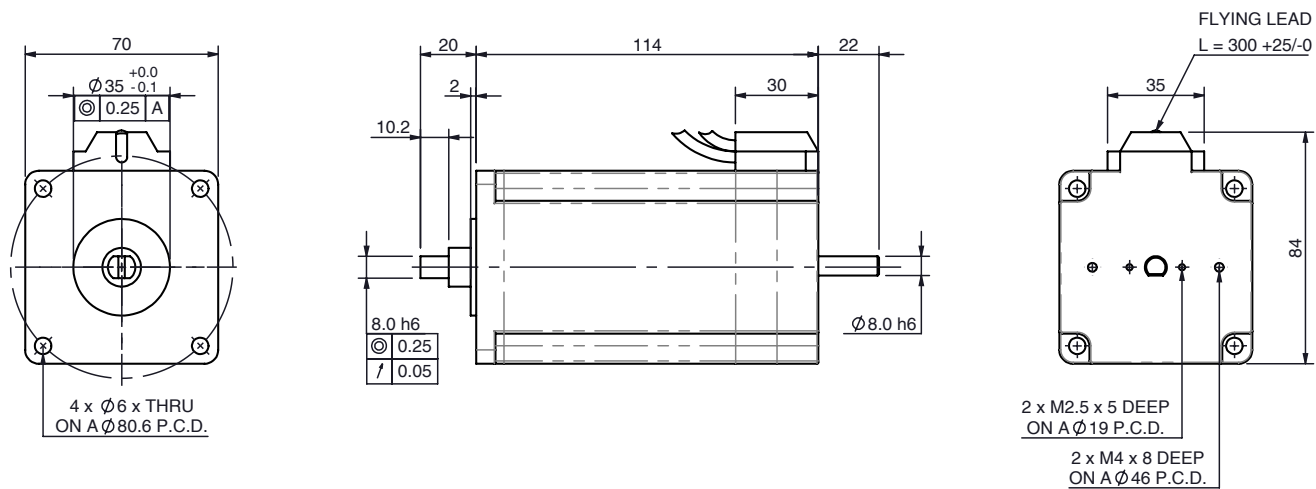
## Notes

<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at [parvalux.com](http://parvalux.com)

→ Technical data displayed above calculated based on **PBL60-70 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.

→ Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

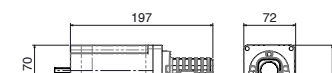
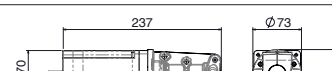
Ø70 mm frame // 70 mm stack



| Part number key                             |                   |                         |          |
|---------------------------------------------|-------------------|-------------------------|----------|
| Modular                                     | #####             |                         |          |
| Standard                                    | #####             |                         |          |
| Calculated data                             | #####             |                         |          |
| Technical data                              |                   |                         |          |
| 1 Part number                               | 776622            |                         |          |
| 2 Nominal power                             | W                 | 363                     |          |
| 3 Nominal voltage                           | V                 | 48                      |          |
| 4 No load speed                             | rpm               | 4857                    |          |
| 5 No load current                           | A                 | 1.4                     |          |
| 6 Nominal speed                             | rpm               | 4500                    |          |
| 7 Nominal continuous torque (S1)            | Nm                | 0.77                    |          |
| 8 Nominal continuous current (S1)           | A                 | 8.9                     |          |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 1.35                    |          |
| 10 Stall current                            | A                 | 68.2                    |          |
| 11 Stall torque                             | Nm                | 6.9                     |          |
| 12 Stack length                             | mm                | 70                      |          |
| 13 Maximum efficiency                       | %                 | 84                      |          |
| 14 Ra                                       | Ω                 | 0.15                    |          |
| 15 Rl                                       | mH                | 0.283                   |          |
| 16 Speed constant                           | rpm/V             | 102.2                   |          |
| 17 Torque constant                          | Nm/A              | 0.103                   |          |
| 18 Speed torque gradient                    | rpm/Nm            | 731.0                   |          |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 2.39 x 10 <sup>-4</sup> |          |
| 20 Weight                                   | Kg                | 2.20                    |          |
| Connection details                          |                   |                         |          |
|                                             | Lead colour       | Lead gauge              | Function |
|                                             | Red               | UL1569/26 AWG           | VCC      |
|                                             | Black             | UL1569/26 AWG           | GND      |
|                                             | Blue              | UL1569/26 AWG           | Hall A   |
|                                             | Green             | UL1569/26 AWG           | Hall B   |
|                                             | White             | UL1569/26 AWG           | Hall C   |
|                                             | Red               | UL3266/16 AWG           | Phase U  |
|                                             | Yellow            | UL3266/16 AWG           | Phase V  |
|                                             | Black             | UL3266/16 AWG           | Phase W  |
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## PBL70-70 combinations

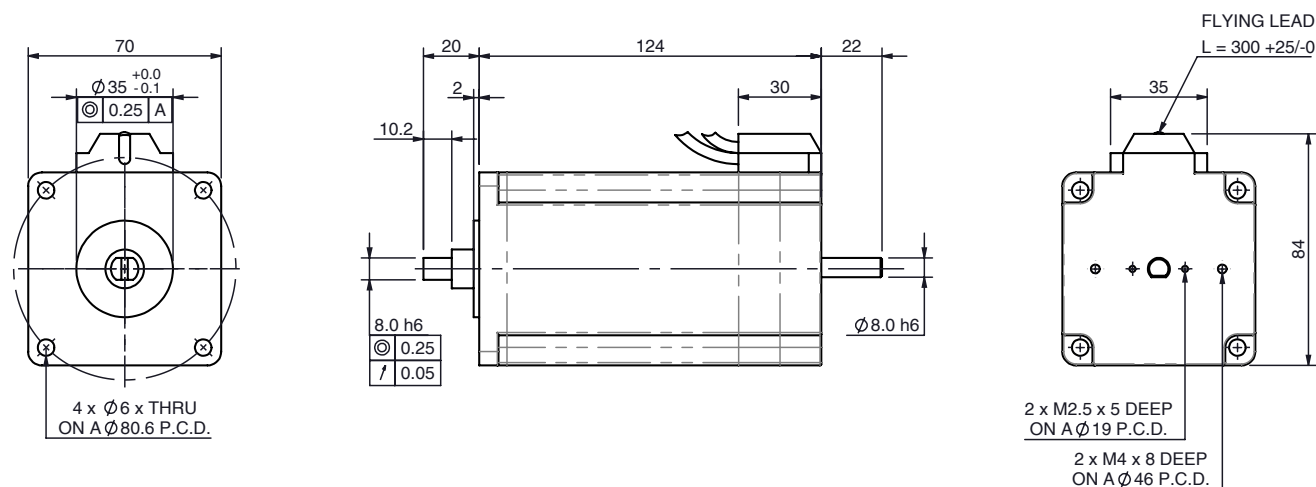
Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data          |     |           |           |           |
|---------------------|-------------------------------------------------------------------------------------|-------------------------|-----|-----------|-----------|-----------|
| PBL70-70-GB80       |  | Gear material           |     | Composite | Composite | Composite |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1  | 15        | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm | 300       | 150       | 75        |
|                     |                                                                                     | Nominal torque          | Nm  | 8.0       | 8.0       | 6.0       |
|                     |                                                                                     | Intermittent torque     | Nm  | 13.0      | 13.0      | 10.0      |
| PBL70-70-GB12       |  | Gear material           |     | Bronze    | Bronze    | Bronze    |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1  | 15        | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm | 300       | 150       | 75        |
|                     |                                                                                     | Nominal torque          | Nm  | 8.7       | 15.0      | 23.1      |
|                     |                                                                                     | Intermittent torque     | Nm  | 15.2      | 26.3      | 40.5      |

| Key                                      | Notes                                                                                                                                                     |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at <a href="http://parvalux.com">parvalux.com</a> |

- Technical data displayed above calculated based on **PBL70-70 48V 4500 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

Ø70 mm frame // 80 mm stack



| Part number key                             |                   |                         |
|---------------------------------------------|-------------------|-------------------------|
| Modular                                     | #####             |                         |
| Standard                                    | #####             |                         |
| Calculated data                             | #####             |                         |
| Technical data                              |                   |                         |
| 1 Part number                               | 776623            |                         |
| 2 Nominal power                             | W                 | 415                     |
| 3 Nominal voltage                           | V                 | 48                      |
| 4 No load speed                             | rpm               | 4902                    |
| 5 No load current                           | A                 | 1.5                     |
| 6 Nominal speed                             | rpm               | 4500                    |
| 7 Nominal continuous torque (S1)            | Nm                | 0.88                    |
| 8 Nominal continuous current (S1)           | A                 | 10.4                    |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm                | 1.54                    |
| 10 Stall current                            | A                 | 75.6                    |
| 11 Stall torque                             | Nm                | 7.3                     |
| 12 Stack length                             | mm                | 80                      |
| 13 Maximum efficiency                       | %                 | 82                      |
| 14 Ra                                       | Ω                 | 0.151                   |
| 15 Rl                                       | mH                | 0.22                    |
| 16 Speed constant                           | rpm/V             | 103                     |
| 17 Torque constant                          | Nm/A              | 0.10                    |
| 18 Speed torque gradient                    | rpm/Nm            | 691.7                   |
| 19 Rotor inertia                            | Kgcm <sup>2</sup> | 2.77 × 10 <sup>-4</sup> |
| 20 Weight                                   | Kg                | 2.60                    |

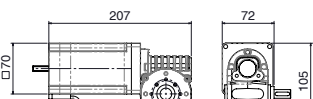
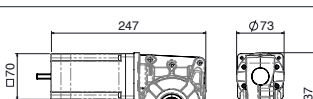
| Thermal data                            |         |             |
|-----------------------------------------|---------|-------------|
| 21 Ambient temperature                  | °C      | 40          |
|                                         |         |             |
| Mechanical data                         |         |             |
| 22 Radial load [distance from flange]   | N [mm]  | 350 [15]    |
| 23 Radial play                          | mm [@g] | 0.025 [450] |
| 24 Axial end play                       | mm [@g] | 0.025 [450] |
|                                         |         |             |
| Other data                              |         |             |
| 25 Number of poles                      |         | 8           |
| 26 Winding type                         |         | Delta       |
| 27 Hall effect angle (electrical angle) | °       | 120         |
| 28 IP Rating                            |         | IP54        |
| 29 Enclosure                            |         | Enclosed    |
| 30 Insulation Class                     |         | B           |

| Compatible products |    |        |     |            |     |
|---------------------|----|--------|-----|------------|-----|
| Gearbox             |    | Brake  |     | Controller |     |
| Page #              |    | Page # |     | Page #     |     |
| GB80                | 75 | 1.5 Nm | 118 | SC 50/15   | 120 |
| GB12                | 76 |        |     |            |     |
| Encoder             |    | Page # |     |            |     |
| Incr. 5-pin         |    | 116    |     |            |     |
| Incr. 10-pin        |    | 116    |     |            |     |
| Diff. 10-pin        |    | 117    |     |            |     |

all dimensions in mm

## PBL70-80 combinations

### Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data          |           |      |           |           |
|---------------------|-------------------------------------------------------------------------------------|-------------------------|-----------|------|-----------|-----------|
| PAL70-80-G880       |  | Gear material           | Composite |      | Composite | Composite |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1        | 15   | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm       | 300  | 150       | 75        |
|                     |                                                                                     | Nominal torque          | Nm        | 8.0  | 8.0       | 6.0       |
|                     |                                                                                     | Intermittent torque     | Nm        | 13.0 | 13.0      | 10.0      |
| PAL70-80-G812       |  | Gear material           | Bronze    |      | Bronze    | Bronze    |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1        | 15   | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm       | 300  | 150       | 75        |
|                     |                                                                                     | Nominal torque          | Nm        | 9.9  | 17.2      | 26.4      |
|                     |                                                                                     | Intermittent torque     | Nm        | 17.3 | 30.0      | 46.2      |

| Key                                      | Notes                                                                                                                                                     |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at <a href="http://parvalux.com">parvalux.com</a> |

- Technical data displayed above calculated based on **PBL70-80 48V 4500 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

Ø86 mm frame // 55 mm stack



## 36 Motors

### Quickview - combination drawing and technical data

### Key

## Notes

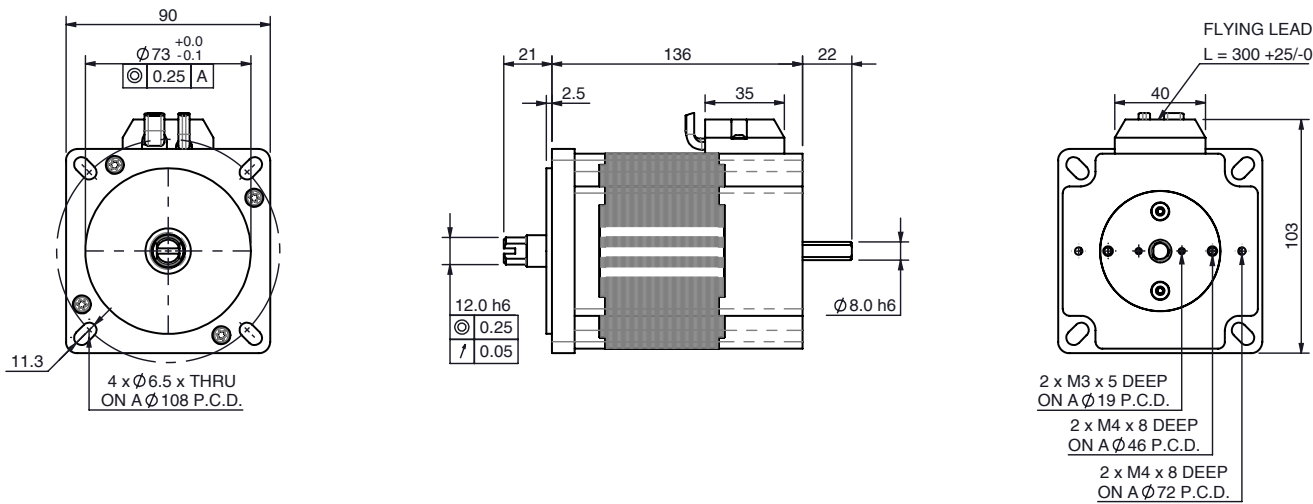
→ Technical data displayed above calculated based on **PBL86-55 48V 4000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.

→ Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

PBL86-80 BLDC motor

Ø86 mm frame // 80 mm stack

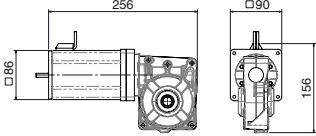
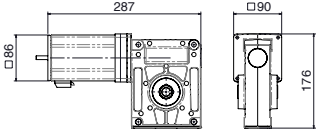
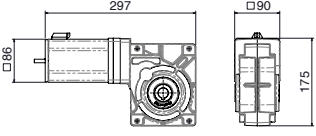
all dimensions in mm



| Part number key                             |             |                        |          |
|---------------------------------------------|-------------|------------------------|----------|
| Modular                                     | #####       |                        |          |
| Standard                                    | #####       |                        |          |
| Calculated data                             | #####       |                        |          |
| Technical data                              |             |                        |          |
| 1 Part number                               | 776625      |                        |          |
| 2 Nominal power                             | W           | 586                    |          |
| 3 Nominal voltage                           | V           | 48                     |          |
| 4 No load speed                             | rpm         | 4192                   |          |
| 5 No load current                           | A           | 1.9                    |          |
| 6 Nominal speed                             | rpm         | 4000                   |          |
| 7 Nominal continuous torque (S1)            | Nm          | 1.4                    |          |
| 8 Nominal continuous current (S1)           | A           | 14.4                   |          |
| 9 Max Intermittent torque (S2 - 15 minutes) | Nm          | 2.45                   |          |
| 10 Stall current                            | A           | 116                    |          |
| 11 Stall torque                             | Nm          | 12.7                   |          |
| 12 Stack length                             | mm          | 80                     |          |
| 13 Maximum efficiency                       | %           | 83                     |          |
| 14 Ra                                       | Ω           | 0.057                  |          |
| 15 Ri                                       | mH          | 0.16                   |          |
| 16 Speed constant                           | rpm/V       | 87.9                   |          |
| 17 Torque constant                          | Nm/A        | 0.11                   |          |
| 18 Speed torque gradient                    | rpm/Nm      | 345.6                  |          |
| 19 Rotor inertia                            | Kgm²        | 2.9 x 10 <sup>-4</sup> |          |
| 20 Weight                                   | Kg          | 4.20                   |          |
| Connection details                          |             |                        |          |
|                                             | Lead colour | Lead gauge             | Function |
|                                             | Red         | UL1569/26 AWG          | VCC      |
|                                             | Black       | UL1569/26 AWG          | GND      |
|                                             | Blue        | UL1569/26 AWG          | Hall A   |
|                                             | Green       | UL1569/26 AWG          | Hall B   |
|                                             | White       | UL1569/26 AWG          | Hall C   |
|                                             | Red         | UL1569/14 AWG          | Phase U  |
|                                             | Yellow      | UL1569/14 AWG          | Phase V  |
|                                             | Black       | UL1569/14 AWG          | Phase W  |
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|                                             |             |                        |          |

PBL86-80 combinations

Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data                   |     |            |           |            |        |        |
|---------------------|-------------------------------------------------------------------------------------|----------------------------------|-----|------------|-----------|------------|--------|--------|
| PBL86-80-GB12       |  | Gear material                    |     | Bronze     | Bronze    | Bronze     |        |        |
|                     |                                                                                     | Gear ratio <sup>1</sup>          | :1  | 15         | 30        | 60         |        |        |
|                     |                                                                                     | Speed                            | rpm | 267        | 133       | 67         |        |        |
|                     |                                                                                     | Nominal torque                   | Nm  | 15.8       | 27.3      | 30.0       |        |        |
|                     |                                                                                     | Intermittent torque              | Nm  | 27.6       | 47.8      | 48.0       |        |        |
| PBL86-80-GB9        |  | Gear material                    |     | Composite. | Composite | Composite. |        |        |
|                     |                                                                                     | Gear ratio [stages] <sup>1</sup> | :1  | 15         | 30        | 60         |        |        |
|                     |                                                                                     | Speed                            | rpm | 267        | 133       | 67         |        |        |
|                     |                                                                                     | Nominal torque                   | Nm  | 17.9       | 31.5      | 50.0       |        |        |
|                     |                                                                                     | Intermittent torque              | Nm  | 31.2       | 55.1      | 80.0       |        |        |
| PBL86-80-GB65       |  | Gear material                    |     | Bronze     | Bronze    | Bronze     | Bronze | Bronze |
|                     |                                                                                     | Gear ratio <sup>1</sup>          | :1  | 20         | 40        | 80         | 120    | 160    |
|                     |                                                                                     | Speed                            | rpm | 200        | 100       | 50         | 33     | 25     |
|                     |                                                                                     | Nominal torque                   | Nm  | 22.7       | 42.6      | 78.4       | 100.8  | 96.3   |
|                     |                                                                                     | Intermittent torque              | Nm  | 39.7       | 74.5      | 137.2      | 176.4  | 168.6  |

Key

Modular combination / modular gear ratio

Notes

<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on **PBL86-80 48V 4000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

RE38-25
PMDc motor
Ø38 mm frame // 25 mm stack

all dimensions in mm

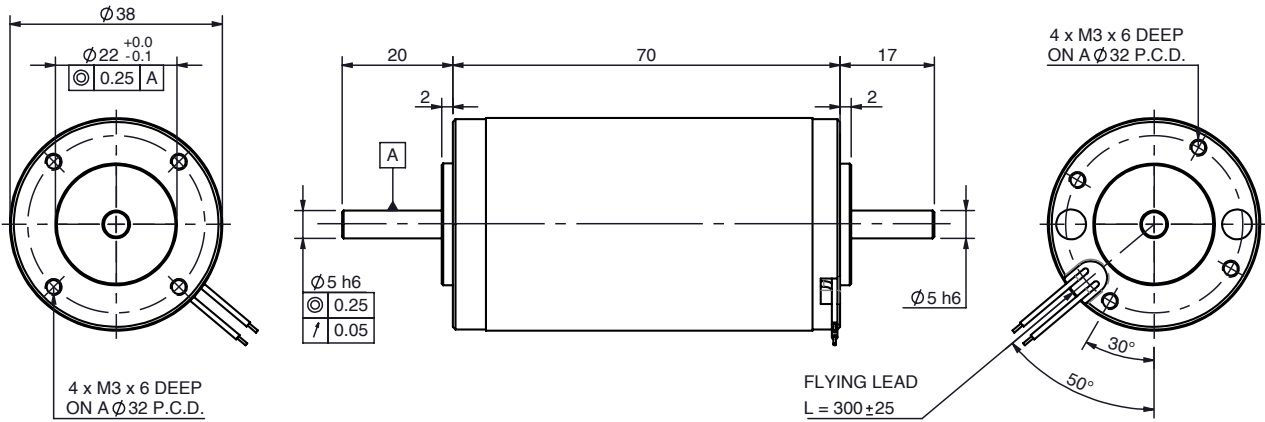


Table with 4 columns: Part number key, Technical data, and two columns for part numbers 857662 and 857663. Rows include 1 Part number, 2 Nominal power, 3 Nominal voltage, 4 No load speed, 5 No load current, 6 Nominal speed, 7 Nominal continuous torque (S1), 8 Nominal continuous current (S1), 9 Max. intermittent torque (S2 - 15 minutes), 10 Stall current, 11 Stall torque, 12 Stack length, 13 Maximum efficiency, 14 Terminal resistance, 15 Terminal inductance, 16 Speed constant, 17 Torque constant, 18 Speed torque gradient, 19 Rotor inertia.

Table with 4 columns: Thermal data, Compatible products, and two columns for part numbers 857662 and 857663. Rows include 20 Ambient temperature, 21 Radial load [distance from flange], 22 Number of poles, 23 Weight, 24 IP rating, 25 Enclosure, 26 Insulation Class, 27 Reversible.

RE38-25 combinations

Quickview - combination drawing and technical data

Table with 2 main sections: Combination drawing and Technical data. The Technical data section includes rows for Gear material, Gear ratio [stages]¹, Speed, Nominal torque, and Intermittent torque, with columns for different gearbox configurations.

Table with 2 columns: Key and Notes. The Key section includes Modular combination / modular gear ratio. The Notes section includes a footnote about full, non-modular gear ratio options.

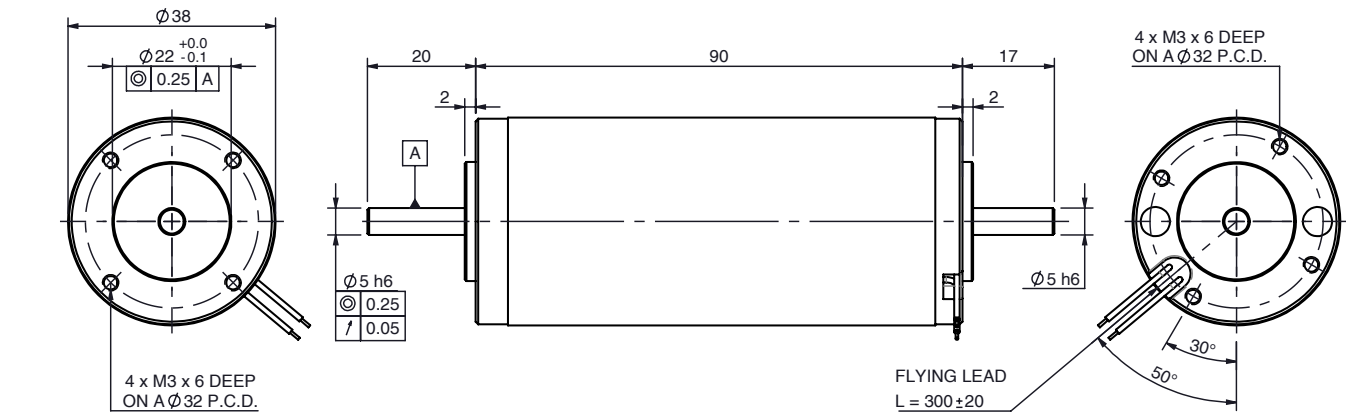
- Technical data displayed above calculated based on RE38-25 48V 3250 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

RE38-40

PMDC motor

Ø38 mm frame // 40 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                        |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                        |
| Standard                                     | #####            |                                                                                                                                                                                             |                        |
| Calculated data                              | #####            |                                                                                                                                                                                             |                        |
| Technical data                               |                  |                                                                                                                                                                                             |                        |
| 1 Part number                                |                  | 857664                                                                                                                                                                                      | 857665                 |
| 2 Nominal power                              | W                | 40                                                                                                                                                                                          | 40                     |
| 3 Nominal voltage                            | V                | 24                                                                                                                                                                                          | 48                     |
| 4 No load speed                              | rpm              | 4065                                                                                                                                                                                        | 3856                   |
| 5 No load current                            | A                | 0.23                                                                                                                                                                                        | 0.12                   |
| 6 Nominal speed                              | rpm              | 3200                                                                                                                                                                                        | 3200                   |
| 7 Nominal continuous torque (S1)             | Nm               | 0.12                                                                                                                                                                                        | 0.12                   |
| 8 Nominal continuous current (S1)            | A                | 2.20                                                                                                                                                                                        | 1.11                   |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.18                                                                                                                                                                                        | 0.18                   |
| 10 Stall current                             | A                | 10.7                                                                                                                                                                                        | 5.9                    |
| 11 Stall torque                              | Nm               | 0.63                                                                                                                                                                                        | 0.68                   |
| 12 Stack length                              | mm               | 40                                                                                                                                                                                          | 40                     |
| 13 Maximum efficiency                        | %                | 0.77                                                                                                                                                                                        | 0.77                   |
| 14 Terminal resistance                       | Ω                | 1.72                                                                                                                                                                                        | 6.86                   |
| 15 Terminal inductance                       | mH               | 1.62                                                                                                                                                                                        | 6.92                   |
| 16 Speed constant                            | rpm/V            | 170.7                                                                                                                                                                                       | 81.6                   |
| 17 Torque constant                           | Nm/A             | 0.06                                                                                                                                                                                        | 0.12                   |
| 18 Speed torque gradient                     | rpm/Nm           | 6533                                                                                                                                                                                        | 5830                   |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 1.3 x 10 <sup>-6</sup>                                                                                                                                                                      | 1.3 x 10 <sup>-6</sup> |

| Thermal data                          |        |          | Compatible products |  |  |  |  |  |
|---------------------------------------|--------|----------|---------------------|--|--|--|--|--|
| 20 Ambient temperature                | °C     | 40       |                     |  |  |  |  |  |
| Mechanical data                       |        |          |                     |  |  |  |  |  |
| 21 Radial load [distance from flange] | N [mm] | 60 [20]  |                     |  |  |  |  |  |
| Other data                            |        |          |                     |  |  |  |  |  |
| 22 Number of poles                    |        | 2        |                     |  |  |  |  |  |
| 23 Weight                             | Kg     | 0.40     |                     |  |  |  |  |  |
| 24 IP rating                          |        | IP50     |                     |  |  |  |  |  |
| 25 Enclosure                          |        | Enclosed |                     |  |  |  |  |  |
| 26 Insulation Class                   |        | F        |                     |  |  |  |  |  |
| 27 Reversible                         |        | Yes      |                     |  |  |  |  |  |

| Gearbox | Page # | Encoder      | Page # | Controller | Page # |
|---------|--------|--------------|--------|------------|--------|
| PGx42   | 80     | Incr. 5-pin  | 116    | SC 50/15   | 120    |
| GB56    | 77     | Incr. 10-pin | 116    |            |        |
|         |        | Diff. 10-pin | 117    |            |        |

RE38-40 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data                   |     |           |           |           |           |
|---------------------|--|----------------------------------|-----|-----------|-----------|-----------|-----------|
| RE38-40-PGx42       |  | Gear material                    |     | Bronze    | Bronze    | Bronze    | Bronze    |
|                     |  | Gear ratio [stages] <sup>1</sup> | :1  | 4.3 [1]   | 19 [2]    | 66 [3]    | 150 [4]   |
|                     |  | Speed                            | rpm | 744.2     | 168.4     | 48.5      | 21.3      |
|                     |  | Nominal torque                   | Nm  | 0.5       | 1.8       | 5.7       | 11.3      |
|                     |  | Intermittent torque              | Nm  | 0.7       | 2.8       | 8.6       | 16.9      |
| RE38-40-GB56        |  | Gear material                    |     | Composite | Composite | Composite | Composite |
|                     |  | Gear ratio [stages] <sup>1</sup> | :1  | 4         | 30        | 70        | 4         |
|                     |  | Speed                            | rpm | 106.7     | 80.0      | 66.7      | 53.3      |
|                     |  | Nominal torque                   | Nm  | 2.1       | 2.6       | 2.9       | 3.1       |
|                     |  | Intermittent torque              | Nm  | 3.2       | 3.9       | 4.3       | 4.6       |

Key

Modular combination / modular gear ratio

Notes

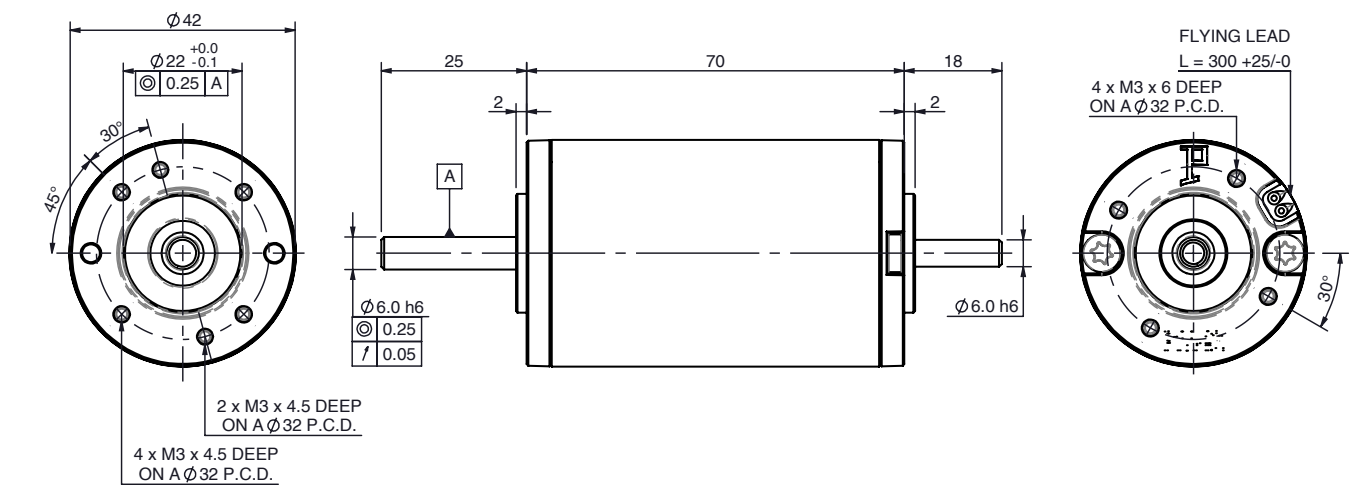
<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on RE38-40 48V 3200 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx42-25 PMDC motor

Ø42 mm frame // 19 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                        |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                        |
| Standard                                     | #####            |                                                                                                                                                                                             |                        |
| Calculated data                              | #####            |                                                                                                                                                                                             |                        |
| Technical data                               |                  |                                                                                                                                                                                             |                        |
| 1 Part number                                |                  | 781076                                                                                                                                                                                      | 781077                 |
| 2 Nominal power                              | W                | 12                                                                                                                                                                                          | 12                     |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                     |
| 4 No load speed                              | rpm              | 4091                                                                                                                                                                                        | 4006                   |
| 5 No load current                            | A                | 0.280                                                                                                                                                                                       | 0.150                  |
| 6 Nominal speed                              | rpm              | 3000                                                                                                                                                                                        | 3000                   |
| 7 Nominal continuous torque (S1)             | Nm               | 0.038                                                                                                                                                                                       | 0.038                  |
| 8 Nominal continuous current (S1)            | A                | 1.60                                                                                                                                                                                        | 0.78                   |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.06                                                                                                                                                                                        | 0.06                   |
| 10 Stall current                             | A                | 5.30                                                                                                                                                                                        | 2.78                   |
| 11 Stall torque                              | Nm               | 0.13                                                                                                                                                                                        | 0.14                   |
| 12 Stack length                              | mm               | 19                                                                                                                                                                                          | 19                     |
| 13 Maximum efficiency                        | %                | 71                                                                                                                                                                                          | 71                     |
| 14 Terminal resistance                       | Ω                | 2.09                                                                                                                                                                                        | 7.02                   |
| 15 Terminal inductance                       | mH               | 1.56                                                                                                                                                                                        | 7.26                   |
| 16 Speed constant                            | rpm/V            | 354.6                                                                                                                                                                                       | 175.1                  |
| 17 Torque constant                           | Nm/A             | 0.03                                                                                                                                                                                        | 0.05                   |
| 18 Speed torque gradient                     | rpm/Nm           | 32623                                                                                                                                                                                       | 29121                  |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 1.0 x 10 <sup>-6</sup>                                                                                                                                                                      | 1.0 x 10 <sup>-6</sup> |

| Thermal data                          |        |          |
|---------------------------------------|--------|----------|
| 20 Ambient temperature                | °C     | 40       |
|                                       |        |          |
| Mechanical data                       |        |          |
| 21 Radial load [distance from flange] | N [mm] | 60 [15]  |
|                                       |        |          |
| Other data                            |        |          |
| 22 Number of poles                    |        | 2        |
| 23 Weight                             | Kg     | 0.39     |
| 24 IP rating                          |        | IP54     |
| 25 Enclosure                          |        | Enclosed |
| 26 Insulation Class                   |        | F        |
| 27 Reversible                         |        | Yes      |
|                                       |        |          |
|                                       |        |          |

| Compatible products |        |              |        |            |        |
|---------------------|--------|--------------|--------|------------|--------|
| Gearbox             | Page # | Encoder      | Page # | Controller | Page # |
| PGx42               | 80     | Incr. 5-pin  | 116    | SC 50/15   | 120    |
|                     |        | Incr. 10-pin | 116    |            |        |
|                     |        | Diff. 10-pin | 117    |            |        |

BRx42-25 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data                   |     |         |        |        |         |
|---------------------|--|----------------------------------|-----|---------|--------|--------|---------|
| BRx42-25-PGx42      |  | Gear material                    |     | Bronze  | Bronze | Bronze | Bronze  |
|                     |  | Gear ratio [stages] <sup>1</sup> | :1  | 4.3 [1] | 19 [2] | 66 [3] | 150 [4] |
|                     |  | Speed                            | rpm | 697.7   | 157.9  | 45.5   | 20.0    |
|                     |  | Nominal torque                   | Nm  | 0.1     | 0.6    | 1.8    | 3.6     |
|                     |  | Intermittent torque              | Nm  | 0.2     | 0.9    | 2.9    | 5.8     |

| Key                                      | Notes                                                                                                                   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com |

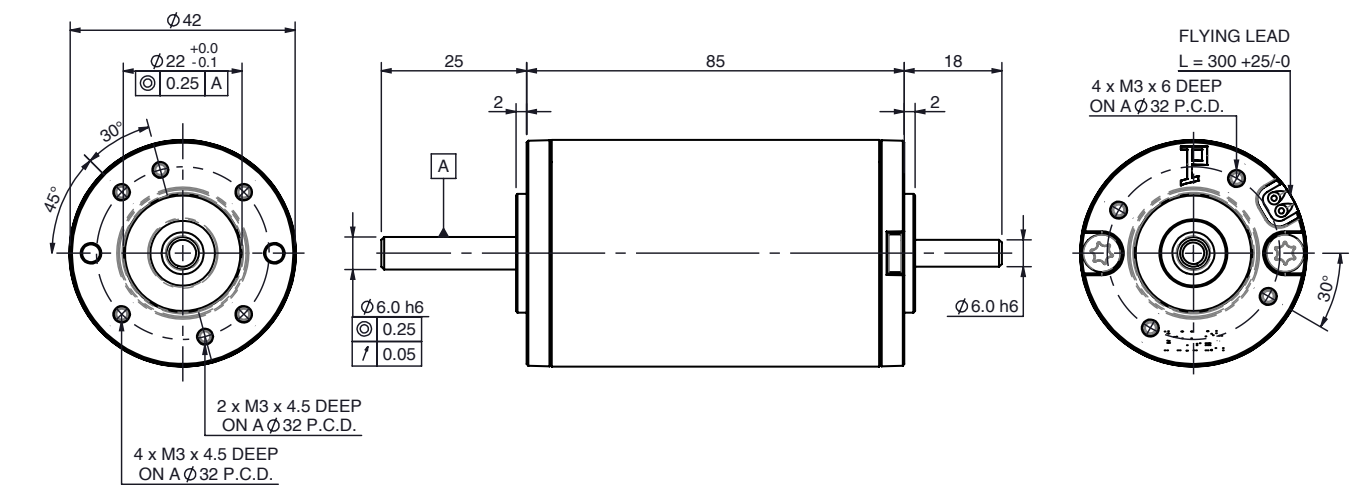
- Technical data displayed above calculated based on BRx42-25 24V 3000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx42-40

PMDC motor

Ø42 mm frame // 34 mm stack

all dimensions in mm

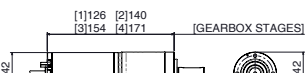


| Part number key                              |        |                                                                                                                                                                                             |                        |                        |
|----------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| Modular                                      | #####  | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                        |                        |
| Standard                                     | #####  |                                                                                                                                                                                             |                        |                        |
| Calculated data                              | #####  |                                                                                                                                                                                             |                        |                        |
| Technical data                               |        |                                                                                                                                                                                             |                        |                        |
| 1 Part number                                |        | 781079                                                                                                                                                                                      | 781080                 | 781081                 |
| 2 Nominal power                              | W      | 18                                                                                                                                                                                          | 18                     | 18                     |
| 3 Nominal voltage                            | V      | 12                                                                                                                                                                                          | 24                     | 48                     |
| 4 No load speed                              | rpm    | 3925                                                                                                                                                                                        | 3931                   | 4054                   |
| 5 No load current                            | A      | 0.20                                                                                                                                                                                        | 0.10                   | 0.08                   |
| 6 Nominal speed                              | rpm    | 3000                                                                                                                                                                                        | 3000                   | 3000                   |
| 7 Nominal continuous torque (S1)             | Nm     | 0.057                                                                                                                                                                                       | 0.057                  | 0.057                  |
| 8 Nominal continuous current (S1)            | A      | 2.20                                                                                                                                                                                        | 1.06                   | 0.51                   |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm     | 0.09                                                                                                                                                                                        | 0.09                   | 0.09                   |
| 10 Stall current                             | A      | 8.50                                                                                                                                                                                        | 4.79                   | 1.92                   |
| 11 Stall torque                              | Nm     | 0.20                                                                                                                                                                                        | 0.26                   | 0.27                   |
| 12 Stack length                              | mm     | 34                                                                                                                                                                                          | 34                     | 34                     |
| 13 Maximum efficiency                        | %      | 0.74                                                                                                                                                                                        | 0.76                   | 0.85                   |
| 14 Terminal resistance                       | Ω      | 1.51                                                                                                                                                                                        | 4.35                   | 17.25                  |
| 15 Terminal inductance                       | mH     | 1.01                                                                                                                                                                                        | 4.39                   | 18.29                  |
| 16 Speed constant                            | rpm/V  | 329                                                                                                                                                                                         | 164                    | 87.5                   |
| 17 Torque constant                           | Nm/A   | 0.03                                                                                                                                                                                        | 0.06                   | 0.12                   |
| 18 Speed torque gradient                     | rpm/Nm | 17670                                                                                                                                                                                       | 14935                  | 18613                  |
| 19 Rotor inertia                             | gcm²   | 1.4 x 10 <sup>-6</sup>                                                                                                                                                                      | 1.4 x 10 <sup>-6</sup> | 1.4 x 10 <sup>-6</sup> |

| Thermal data                          |        |          | Compatible products |        |             |        |            |        |
|---------------------------------------|--------|----------|---------------------|--------|-------------|--------|------------|--------|
| 20 Ambient temperature                | °C     | 40       |                     |        |             |        |            |        |
| Mechanical data                       |        |          | Gearbox             | Page # | Encoder     | Page # | Controller | Page # |
| 21 Radial load [distance from flange] | N [mm] | 60 [15]  | PGx42               | 80     | Incr. 5-pin | 116    | SC 50/15   | 120    |
| Other data                            |        |          |                     |        |             |        |            |        |
| 22 Number of poles                    |        | 2        |                     |        |             |        |            |        |
| 23 Weight                             | Kg     | 0.52     |                     |        |             |        |            |        |
| 24 IP rating                          |        | IP54     |                     |        |             |        |            |        |
| 25 Enclosure                          |        | Enclosed |                     |        |             |        |            |        |
| 26 Insulation Class                   |        | F        |                     |        |             |        |            |        |
| 27 Reversible                         |        | Yes      |                     |        |             |        |            |        |

BRx42-40 combinations

Quickview - combination drawing and technical data

| Combination drawing                      |                                                                                     | Technical data                                                                                                                                                 |            |         |        |        |         |         |
|------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|--------|--------|---------|---------|
| BRx42-40-PGx42                           |  | Gear material                                                                                                                                                  |            | Bronze  | Bronze | Bronze | Bronze  | Bronze  |
|                                          |                                                                                     | Gear ratio [stages] <sup>1</sup>                                                                                                                               | :1         | 4.3 [1] | 19 [2] | 66 [3] | 150 [4] | 353 [4] |
|                                          |                                                                                     | Speed                                                                                                                                                          | <b>rpm</b> | 697.7   | 157.9  | 45.5   | 20.0    | 8.5     |
|                                          |                                                                                     | Nominal torque                                                                                                                                                 | <b>Nm</b>  | 0.2     | 0.9    | 2.7    | 5.5     | 11.3    |
|                                          |                                                                                     | Intermittent torque                                                                                                                                            | <b>Nm</b>  | 0.3     | 1.4    | 4.3    | 8.6     | 16.9    |
| Key                                      |                                                                                     | Notes                                                                                                                                                          |            |         |        |        |         |         |
| Modular combination / modular gear ratio |                                                                                     | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at <a href="https://www.parvalux.com">parvalux.com</a> |            |         |        |        |         |         |

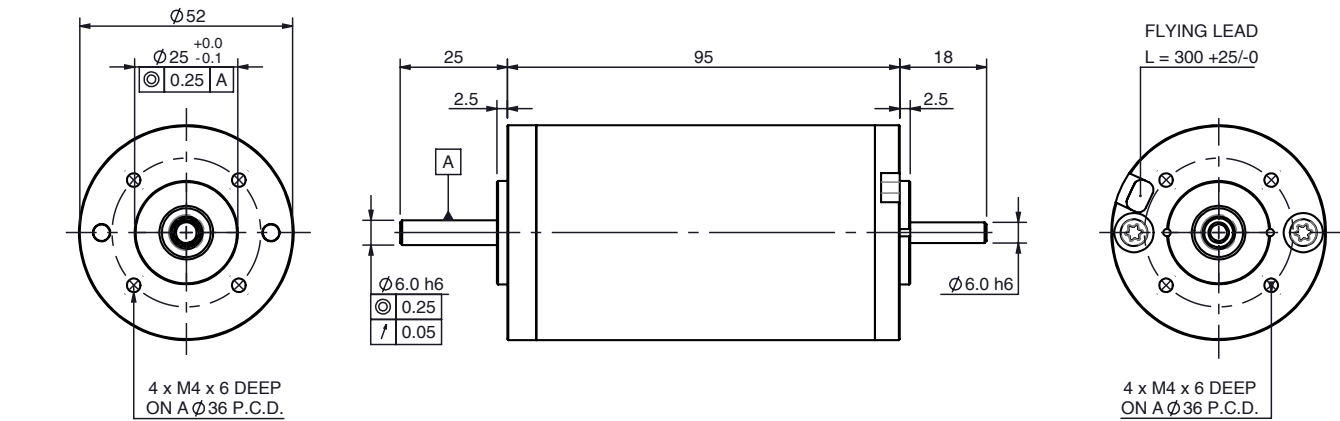
- Technical data displayed above calculated based on BRx42-40 48V 3000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx52-30

PMDC motor

Ø52 mm frame // 30 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                         |                         |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                         |                         |
| Standard                                     | #####            |                                                                                                                                                                                             |                         |                         |
| Calculated data                              | #####            |                                                                                                                                                                                             |                         |                         |
| Technical data                               |                  |                                                                                                                                                                                             |                         |                         |
| 1 Part number                                |                  | 787108                                                                                                                                                                                      | 787109                  | 787110                  |
| 2 Nominal power                              | W                | 28                                                                                                                                                                                          | 28                      | 28                      |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                      | 48                      |
| 4 No load speed                              | rpm              | 3853                                                                                                                                                                                        | 3561                    | 3547                    |
| 5 No load current                            | A                | 0.80                                                                                                                                                                                        | 0.51                    | 0.20                    |
| 6 Nominal speed                              | rpm              | 3000                                                                                                                                                                                        | 3000                    | 3000                    |
| 7 Nominal continuous torque (S1)             | Nm               | 0.09                                                                                                                                                                                        | 0.09                    | 0.09                    |
| 8 Nominal continuous current (S1)            | A                | 3.4                                                                                                                                                                                         | 1.7                     | 0.9                     |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.15                                                                                                                                                                                        | 0.15                    | 0.15                    |
| 10 Stall current                             | A                | 16.2                                                                                                                                                                                        | 9.8                     | 5.0                     |
| 11 Stall torque                              | Nm               | 0.43                                                                                                                                                                                        | 0.50                    | 0.56                    |
| 12 Stack length                              | mm               | 30                                                                                                                                                                                          | 30                      | 30                      |
| 13 Maximum efficiency                        | %                | 76                                                                                                                                                                                          | 78                      | 71                      |
| 14 Terminal resistance                       | Ω                | 0.43                                                                                                                                                                                        | 1.93                    | 6.69                    |
| 15 Terminal inductance                       | mH               | 0.675                                                                                                                                                                                       | 2.713                   | 11.390                  |
| 16 Speed constant                            | rpm/V            | 332.4                                                                                                                                                                                       | 154.9                   | 76.7                    |
| 17 Torque constant                           | Nm/A             | 0.03                                                                                                                                                                                        | 0.060                   | 0.120                   |
| 18 Speed torque gradient                     | rpm/Nm           | 7585                                                                                                                                                                                        | 7250                    | 6692                    |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 2.33 x 10 <sup>-6</sup>                                                                                                                                                                     | 2.33 x 10 <sup>-6</sup> | 2.33 x 10 <sup>-6</sup> |

| Thermal data                          |        |          |
|---------------------------------------|--------|----------|
| 20 Ambient temperature                | °C     | 40       |
|                                       |        |          |
| Mechanical data                       |        |          |
| 21 Radial load [distance from flange] | N [mm] | 90 [15]  |
|                                       |        |          |
| Other data                            |        |          |
| 22 Number of poles                    |        | 2        |
| 23 Weight                             | Kg     | 0.85     |
| 24 IP rating                          |        | IP54     |
| 25 Enclosure                          |        | Enclosed |
| 26 Insulation Class                   |        | F        |
| 27 Reversible                         |        | Yes      |
|                                       |        |          |
|                                       |        |          |

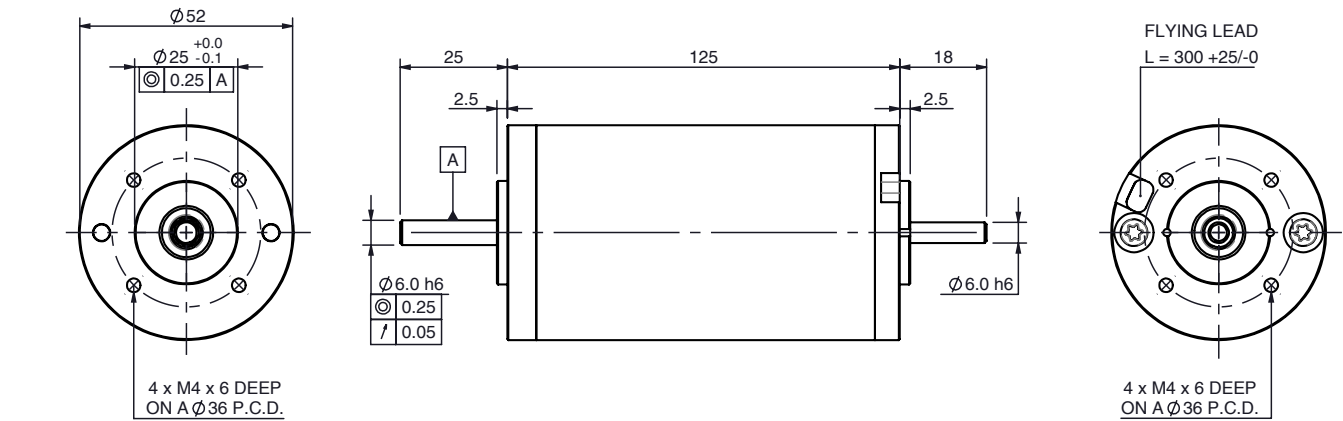
| Compatible products |  |        |  |              |  |        |  |            |  |        |  |
|---------------------|--|--------|--|--------------|--|--------|--|------------|--|--------|--|
| Gearbox             |  | Page # |  | Encoder      |  | Page # |  | Controller |  | Page # |  |
| GB80                |  | 75     |  | Incr. 5-pin  |  | 116    |  | SC 50/15   |  | 120    |  |
|                     |  |        |  | Incr. 10-pin |  | 116    |  |            |  |        |  |
|                     |  |        |  | Diff. 10-pin |  | 117    |  |            |  |        |  |

BRx52-58

PMDC motor

Ø52 mm frame // 58 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                        |                        |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                        |                        |
| Standard                                     | #####            |                                                                                                                                                                                             |                        |                        |
| Calculated data                              | #####            |                                                                                                                                                                                             |                        |                        |
| Technical data                               |                  |                                                                                                                                                                                             |                        |                        |
| 1 Part number                                |                  | 787111                                                                                                                                                                                      | 787113                 | 787114                 |
| 2 Nominal power                              | W                | 48                                                                                                                                                                                          | 69                     | 69                     |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                     | 48                     |
| 4 No load speed                              | rpm              | 3513                                                                                                                                                                                        | 3840                   | 3838                   |
| 5 No load current                            | A                | 0.60                                                                                                                                                                                        | 0.40                   | 0.16                   |
| 6 Nominal speed                              | rpm              | 2850                                                                                                                                                                                        | 3000                   | 3000                   |
| 7 Nominal continuous torque (S1)             | Nm               | 0.16                                                                                                                                                                                        | 0.22                   | 0.22                   |
| 8 Nominal continuous current (S1)            | A                | 5.5                                                                                                                                                                                         | 3.9                    | 2.2                    |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.35                                                                                                                                                                                        | 0.35                   | 0.35                   |
| 10 Stall current                             | A                | 23.6                                                                                                                                                                                        | 19.0                   | 9.5                    |
| 11 Stall torque                              | Nm               | 0.7                                                                                                                                                                                         | 1.1                    | 1.0                    |
| 12 Stack length                              | mm               | 58                                                                                                                                                                                          | 58                     | 58                     |
| 13 Maximum efficiency                        | %                | 73                                                                                                                                                                                          | 80                     | 80                     |
| 14 Terminal resistance                       | Ω                | 0.570                                                                                                                                                                                       | 0.937                  | 3.420                  |
| 15 Terminal inductance                       | mH               | 0.385                                                                                                                                                                                       | 1.272                  | 5.217                  |
| 16 Speed constant                            | rpm/V            | 300.4                                                                                                                                                                                       | 161.8                  | 80.8                   |
| 17 Torque constant                           | Nm/A             | 0.031                                                                                                                                                                                       | 0.056                  | 0.100                  |
| 18 Speed torque gradient                     | rpm/Nm           | 5166                                                                                                                                                                                        | 3805                   | 4411                   |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 5.7 x 10 <sup>-6</sup>                                                                                                                                                                      | 5.7 x 10 <sup>-6</sup> | 5.7 x 10 <sup>-6</sup> |

| Thermal data                          |        |          | Compatible products |        |             |        |            |        |
|---------------------------------------|--------|----------|---------------------|--------|-------------|--------|------------|--------|
| 20 Ambient temperature                | °C     | 40       |                     |        |             |        |            |        |
| Mechanical data                       |        |          | Gearbox             | Page # | Encoder     | Page # | Controller | Page # |
| 21 Radial load [distance from flange] | N [mm] | 90 [15]  | GB80                | 75     | Incr. 5-pin | 116    | SC 50/15   | 120    |
| Other data                            |        |          |                     |        |             |        |            |        |
| 22 Number of poles                    |        | 2        |                     |        |             |        |            |        |
| 23 Weight                             | Kg     | 1.16     |                     |        |             |        |            |        |
| 24 IP rating                          |        | IP54     |                     |        |             |        |            |        |
| 25 Enclosure                          |        | Enclosed |                     |        |             |        |            |        |
| 26 Insulation Class                   |        | F        |                     |        |             |        |            |        |
| 27 Reversible                         |        | Yes      |                     |        |             |        |            |        |

# BRx52-58 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data          |           |       |           |
|---------------------|--|-------------------------|-----------|-------|-----------|
| BRx52-58-GB80       |  | Gear material           | Composite |       | Composite |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15    | 30        |
|                     |  | Speed                   | rpm       | 200.0 | 100.0     |
|                     |  | Nominal torque          | Nm        | 2.5   | 4.6       |
|                     |  | Intermittent torque     | Nm        | 4.0   | 7.4       |

| Key                                      | Notes                                                                                                                   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com |

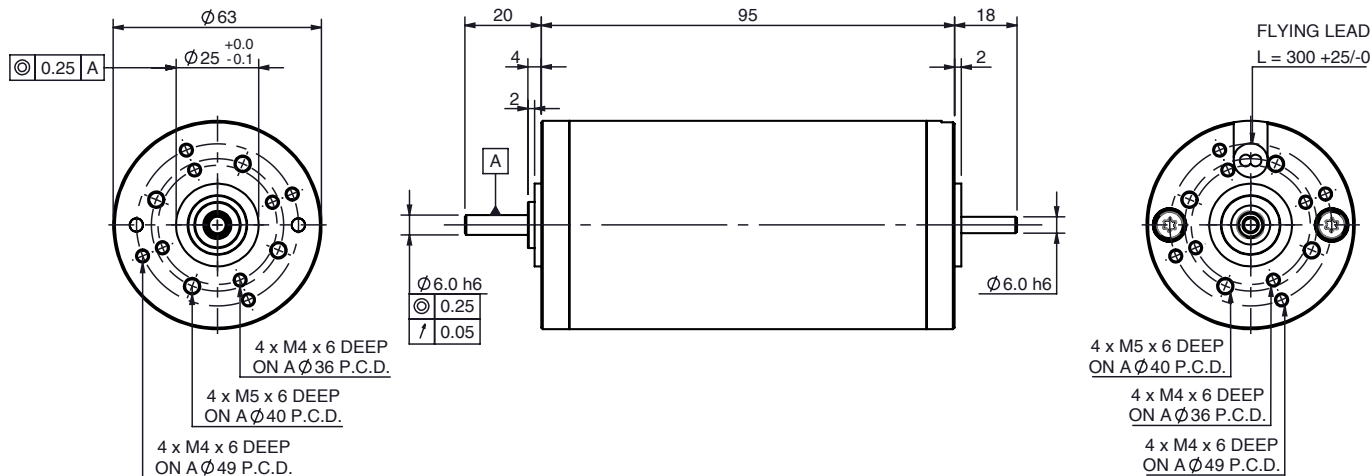
- Technical data displayed above calculated based on BRx52-58 48V 3000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx63-25

PMDc motor

Ø63 mm frame // 25 mm stack

all dimensions in mm

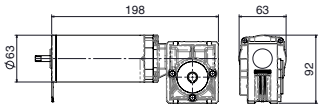
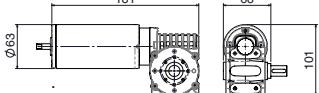


| Part number key                              |                  | <p>Please see our customisation options page for details on the modifications available on our products.</p> <p>Advice and guidance on these options are available from your local sales engineer.</p> |                        |                        |
|----------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| Modular                                      | #####            |                                                                                                                                                                                                        |                        |                        |
| Standard                                     | #####            |                                                                                                                                                                                                        |                        |                        |
| Calculated data                              | #####            |                                                                                                                                                                                                        |                        |                        |
| Technical data                               |                  |                                                                                                                                                                                                        |                        |                        |
| 1 Part number                                |                  | 781083                                                                                                                                                                                                 | 781084                 | 781085                 |
| 2 Nominal power                              | W                | 47                                                                                                                                                                                                     | 57                     | 57                     |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                                     | 24                     | 48                     |
| 4 No load speed                              | rpm              | 3488                                                                                                                                                                                                   | 3591                   | 3621                   |
| 5 No load current                            | A                | 0.6                                                                                                                                                                                                    | 0.30                   | 0.15                   |
| 6 Nominal speed                              | rpm              | 2500                                                                                                                                                                                                   | 3000                   | 3000                   |
| 7 Nominal continuous torque (S1)             | Nm               | 0.18                                                                                                                                                                                                   | 0.18                   | 0.18                   |
| 8 Nominal continuous current (S1)            | A                | 6.0                                                                                                                                                                                                    | 3.0                    | 1.6                    |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.30                                                                                                                                                                                                   | 0.30                   | 0.30                   |
| 10 Stall current                             | A                | 19.4                                                                                                                                                                                                   | 11.8                   | 6.9                    |
| 11 Stall torque                              | Nm               | 0.6                                                                                                                                                                                                    | 0.7                    | 0.8                    |
| 12 Stack length                              | mm               | 25                                                                                                                                                                                                     | 25                     | 25                     |
| 13 Maximum efficiency                        | %                | 67                                                                                                                                                                                                     | 84                     | 84                     |
| 14 Terminal resistance                       | Ω                | 1.260                                                                                                                                                                                                  | 1.649                  | 5.130                  |
| 15 Terminal inductance                       | mH               | 0.5016                                                                                                                                                                                                 | 2.204                  | 8.520                  |
| 16 Speed constant                            | rpm/V            | 298.1                                                                                                                                                                                                  | 151.7                  | 76.5                   |
| 17 Torque constant                           | Nm/A             | 0.03                                                                                                                                                                                                   | 0.06                   | 0.12                   |
| 18 Speed torque gradient                     | rpm/Nm           | 6269                                                                                                                                                                                                   | 5656                   | 5037                   |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 7.4 x 10 <sup>-6</sup>                                                                                                                                                                                 | 7.4 x 10 <sup>-6</sup> | 7.4 x 10 <sup>-6</sup> |

| Thermal data                          |        |          | Compatible products |        |              |        |
|---------------------------------------|--------|----------|---------------------|--------|--------------|--------|
| 20 Ambient temperature                | °C     | 40       |                     |        |              |        |
| Mechanical data                       |        |          |                     |        |              |        |
| 21 Radial load [distance from flange] | N [mm] | 150 [15] | Gearbox             | Page # | Brake        | Page # |
|                                       |        |          | GB28                | 74     | 1.5 Nm       | 118    |
|                                       |        |          | GB80                | 75     |              |        |
| Other data                            |        |          |                     |        | Encoder      | Page # |
| 22 Number of poles                    |        | 2        |                     |        | Incr. 5-pin  | 116    |
| 23 Weight                             | Kg     | 0.85     |                     |        | Incr. 10-pin | 116    |
| 24 IP rating                          |        | IP54     |                     |        | Diff. 10-pin | 117    |
| 25 Enclosure                          |        | Enclosed |                     |        |              |        |
| 26 Insulation Class                   |        | F        |                     |        |              |        |
| 27 Reversible                         |        | Yes      |                     |        |              |        |

BRx63-25 combinations

Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data          |           |       |           |           |
|---------------------|-------------------------------------------------------------------------------------|-------------------------|-----------|-------|-----------|-----------|
| BRA63-25-GB28       |  | Gear material           | Bronze    |       | Bronze    | Bronze    |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1        | 15    | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm       | 200.0 | 100.0     | 50.0      |
|                     |                                                                                     | Nominal torque          | Nm        | 2.0   | 3.5       | 4.9       |
|                     |                                                                                     | Intermittent torque     | Nm        | 3.4   | 5.9       | 8.0       |
| BRA63-25-GB80       |  | Gear material           | Composite |       | Composite | Composite |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1        | 15    | 30        | 60        |
|                     |                                                                                     | Speed                   | rpm       | 200.0 | 100.0     | 50.0      |
|                     |                                                                                     | Nominal torque          | Nm        | 2.1   | 3.8       | 5.8       |
|                     |                                                                                     | Intermittent torque     | Nm        | 3.5   | 6.3       | 9.7       |

Key

Modular combination / modular gear ratio

Notes

<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on BRx63-25 48V 3000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

Ø63 mm frame // 55 mm stack

all dimensions in mm



| Thermal data                          |        |          |
|---------------------------------------|--------|----------|
| 20 Ambient temperature                | °C     | 40       |
|                                       |        |          |
| Mechanical data                       |        |          |
| 21 Radial load [distance from flange] | N [mm] | 150 [15] |
|                                       |        |          |
| Other data                            |        |          |
| 22 Number of poles                    |        | 2        |
| 23 Weight                             | Kg     | 1.16     |
| 24 IP rating                          |        | IP54     |
| 25 Enclosure                          |        | Enclosed |
| 26 Insulation Class                   |        | F        |
| 27 Reversible                         |        | Yes      |
|                                       |        |          |
|                                       |        |          |

| Compatible products |  |        |  |              |  |        |  |            |  |        |  |
|---------------------|--|--------|--|--------------|--|--------|--|------------|--|--------|--|
| Gearbox             |  | Page # |  | Brake        |  | Page # |  | Controller |  | Page # |  |
| GB28                |  | 74     |  | 1.5 Nm       |  | 118    |  | SC 50/15   |  | 120    |  |
| GB80                |  | 75     |  |              |  |        |  |            |  |        |  |
|                     |  |        |  | Encoder      |  | Page # |  |            |  |        |  |
|                     |  |        |  | Incr. 5-pin  |  | 116    |  |            |  |        |  |
|                     |  |        |  | Incr. 10-pin |  | 116    |  |            |  |        |  |
|                     |  |        |  | Diff. 10-pin |  | 117    |  |            |  |        |  |

### Quickview - combination drawing and technical data

| Key                                      | Notes                                                                                                                                                     |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at <a href="http://parvalux.com">parvalux.com</a> |

→ Technical data displayed above calculated based on **BRx63-55 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.

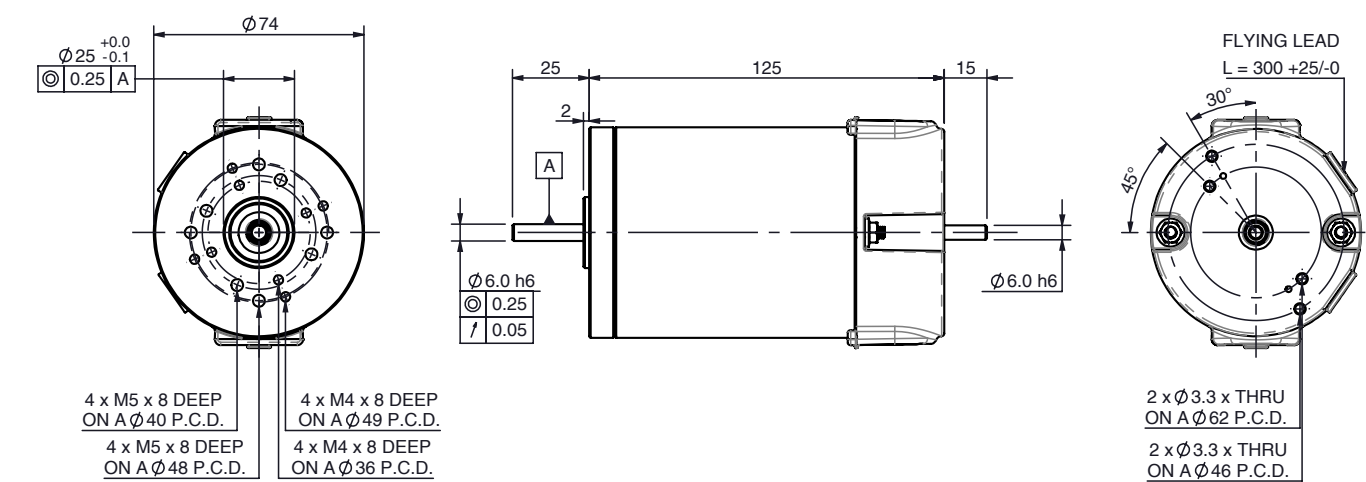
→ Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx70-40

PMDC motor

Ø70 mm frame // 40 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                         |                         |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                         |                         |
| Standard                                     | #####            |                                                                                                                                                                                             |                         |                         |
| Calculated data                              | #####            |                                                                                                                                                                                             |                         |                         |
| Technical data                               |                  |                                                                                                                                                                                             |                         |                         |
| 1 Part number                                |                  | 781092                                                                                                                                                                                      | 781093                  | 781094                  |
| 2 Nominal power                              | W                | 79                                                                                                                                                                                          | 79                      | 79                      |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                      | 48                      |
| 4 No load speed                              | rpm              | 3340                                                                                                                                                                                        | 3433                    | 3167                    |
| 5 No load current                            | A                | 1.50                                                                                                                                                                                        | 0.80                    | 0.28                    |
| 6 Nominal speed                              | rpm              | 3000                                                                                                                                                                                        | 3000                    | 3000                    |
| 7 Nominal continuous torque (S1)             | Nm               | 0.25                                                                                                                                                                                        | 0.25                    | 0.25                    |
| 8 Nominal continuous current (S1)            | A                | 9.2                                                                                                                                                                                         | 4.7                     | 2.1                     |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.42                                                                                                                                                                                        | 0.42                    | 0.42                    |
| 10 Stall current                             | A                | 59.2                                                                                                                                                                                        | 33.5                    | 18.7                    |
| 11 Stall torque                              | Nm               | 1.8                                                                                                                                                                                         | 2.1                     | 2.4                     |
| 12 Stack length                              | mm               | 40                                                                                                                                                                                          | 40                      | 40                      |
| 13 Maximum efficiency                        | %                | 71                                                                                                                                                                                          | 78                      | 78                      |
| 14 Terminal resistance                       | Ω                | 0.13                                                                                                                                                                                        | 0.44                    | 1.86                    |
| 15 Terminal inductance                       | mH               | 0.253                                                                                                                                                                                       | 1.235                   | 5.060                   |
| 16 Speed constant                            | rpm/V            | 280.1                                                                                                                                                                                       | 145.0                   | 66.6                    |
| 17 Torque constant                           | Nm/A             | 0.03                                                                                                                                                                                        | 0.06                    | 0.13                    |
| 18 Speed torque gradient                     | rpm/Nm           | 1944                                                                                                                                                                                        | 1784                    | 1415                    |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 1.83 x 10 <sup>-4</sup>                                                                                                                                                                     | 1.83 x 10 <sup>-4</sup> | 1.83 x 10 <sup>-4</sup> |

| Thermal data                          |        |          | Compatible products |  |  |  |
|---------------------------------------|--------|----------|---------------------|--|--|--|
| 20 Ambient temperature                | °C     | 40       |                     |  |  |  |
| Mechanical data                       |        |          |                     |  |  |  |
| 21 Radial load [distance from flange] | N [mm] | 200 [15] |                     |  |  |  |
| Other data                            |        |          |                     |  |  |  |
| 22 Number of poles                    |        | 2        |                     |  |  |  |
| 23 Weight                             | Kg     | 1.85     |                     |  |  |  |
| 24 IP rating                          |        | IP54     |                     |  |  |  |
| 25 Enclosure                          |        | Enclosed |                     |  |  |  |
| 26 Insulation Class                   |        | F        |                     |  |  |  |
| 27 Reversible                         |        | Yes      |                     |  |  |  |

| Gearbox | Page # | Brake        | Page # | Controller | Page # |
|---------|--------|--------------|--------|------------|--------|
| GB80    | 75     | 1.5 Nm       | 118    | SC 50/15   | 120    |
| GB12    | 76     |              |        |            |        |
|         |        | Encoder      | Page # |            |        |
|         |        | Incr. 5-pin  | 116    |            |        |
|         |        | Incr. 10-pin | 116    |            |        |
|         |        | Diff. 10-pin | 117    |            |        |

BRx70-40 combinations

Quickview - combination drawing and technical data

| Combination drawing |  | Technical data          |           |       |            |
|---------------------|--|-------------------------|-----------|-------|------------|
| BRx70-40-GB80       |  | Gear material           | Composite |       | Composite  |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15    | 30 60      |
|                     |  | Speed                   | rpm       | 200.0 | 100.0 50.0 |
|                     |  | Nominal torque          | Nm        | 2.9   | 5.3 6.0    |
|                     |  | Intermittent torque     | Nm        | 4.9   | 8.8 10.0   |
| BRx70-40-GB12       |  | Gear material           | Bronze    |       | Bronze     |
|                     |  | Gear ratio <sup>1</sup> | :1        | 15    | 30 60      |
|                     |  | Speed                   | rpm       | 200.0 | 100.0 50.0 |
|                     |  | Nominal torque          | Nm        | 2.8   | 4.9 7.5    |
|                     |  | Intermittent torque     | Nm        | 4.7   | 8.2 12.6   |

Key

Modular combination / modular gear ratio

Notes

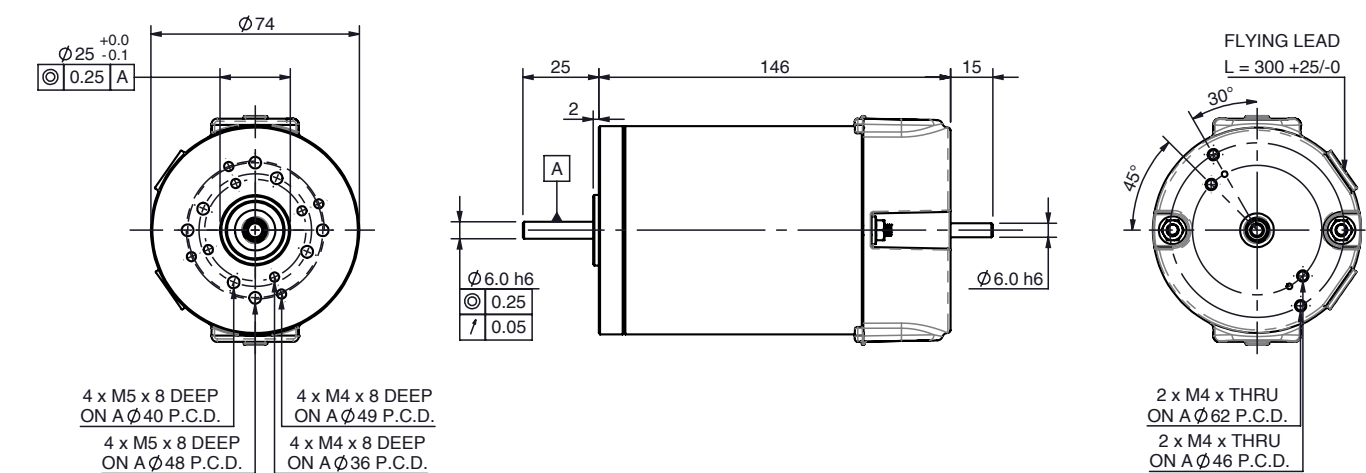
<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on **BRx70-40 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx70-60 PMDC motor

Ø70 mm frame // 60 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                        |                        |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                        |                        |
| Standard                                     | #####            |                                                                                                                                                                                             |                        |                        |
| Calculated data                              | #####            |                                                                                                                                                                                             |                        |                        |
| Technical data                               |                  |                                                                                                                                                                                             |                        |                        |
| 1 Part number                                |                  | 781095                                                                                                                                                                                      | 781096                 | 781097                 |
| 2 Nominal power                              | W                | 157                                                                                                                                                                                         | 157                    | 157                    |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                     | 48                     |
| 4 No load speed                              | rpm              | 3970                                                                                                                                                                                        | 3580                   | 3310                   |
| 5 No load current                            | A                | 1.80                                                                                                                                                                                        | 0.80                   | 0.37                   |
| 6 Nominal speed                              | rpm              | 3000                                                                                                                                                                                        | 3000                   | 3000                   |
| 7 Nominal continuous torque (S1)             | Nm               | 0.5                                                                                                                                                                                         | 0.5                    | 0.5                    |
| 8 Nominal continuous current (S1)            | A                | 21.0                                                                                                                                                                                        | 9.0                    | 4.2                    |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 0.88                                                                                                                                                                                        | 0.88                   | 0.88                   |
| 10 Stall current                             | A                | 70.7                                                                                                                                                                                        | 48.0                   | 28.7                   |
| 11 Stall torque                              | Nm               | 1.8                                                                                                                                                                                         | 2.8                    | 3.6                    |
| 12 Stack length                              | mm               | 60                                                                                                                                                                                          | 60                     | 60                     |
| 13 Maximum efficiency                        | %                | 72                                                                                                                                                                                          | 79                     | 82                     |
| 14 Terminal resistance                       | Ω                | 0.10                                                                                                                                                                                        | 0.36                   | 1.51                   |
| 15 Terminal inductance                       | mH               | 0.15                                                                                                                                                                                        | 0.81                   | 3.29                   |
| 16 Speed constant                            | rpm/V            | 333.1                                                                                                                                                                                       | 150.4                  | 69.1                   |
| 17 Torque constant                           | Nm/A             | 0.026                                                                                                                                                                                       | 0.060                  | 0.130                  |
| 18 Speed torque gradient                     | rpm/Nm           | 2423                                                                                                                                                                                        | 1383                   | 985                    |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 2.5 x 10 <sup>-4</sup>                                                                                                                                                                      | 2.5 x 10 <sup>-4</sup> | 2.5 x 10 <sup>-4</sup> |

| Thermal data                          |        |          |
|---------------------------------------|--------|----------|
| 20 Ambient temperature                | °C     | 40       |
|                                       |        |          |
| Mechanical data                       |        |          |
| 21 Radial load [distance from flange] | N [mm] | 200 [15] |
|                                       |        |          |
| Other data                            |        |          |
| 22 Number of poles                    |        | 2        |
| 23 Weight                             | Kg     | 2.25     |
| 24 IP rating                          |        | IP54     |
| 25 Enclosure                          |        | Enclosed |
| 26 Insulation Class                   |        | F        |
| 27 Reversible                         |        | Yes      |
|                                       |        |          |
|                                       |        |          |

| Compatible products |        |
|---------------------|--------|
| Gearbox             | Page # |
| GB80                | 75     |
| GB12                | 76     |

| Brake  | Page # |
|--------|--------|
| 1.5 Nm | 118    |

| Controller | Page # |
|------------|--------|
| SC 50/15   | 120    |

| Encoder      | Page # |
|--------------|--------|
| Incr. 5-pin  | 116    |
| Incr. 10-pin | 116    |
| Diff. 10-pin | 117    |

BRx70-60 combinations

Quickview - combination drawing and technical data

| Combination drawing | Technical data |                         |           |                  |
|---------------------|----------------|-------------------------|-----------|------------------|
| BRx70-60-GB80       |                | Gear material           | Composite | Composite        |
|                     |                | Gear ratio <sup>1</sup> | :1        | 15 30 60         |
|                     |                | Speed                   | rpm       | 200.0 100.0 50.0 |
|                     |                | Nominal torque          | Nm        | 5.8 8.0 6.0      |
|                     |                | Intermittent torque     | Nm        | 10.2 13.0 10.0   |
| BRx70-60-GB12       |                | Gear material           | Bronze    | Bronze           |
|                     |                | Gear ratio <sup>1</sup> | :1        | 15 30 60         |
|                     |                | Speed                   | rpm       | 200.0 100.0 50.0 |
|                     |                | Nominal torque          | Nm        | 5.6 9.8 15.0     |
|                     |                | Intermittent torque     | Nm        | 9.9 17.2 26.4    |

Key

Modular combination / modular gear ratio

Notes

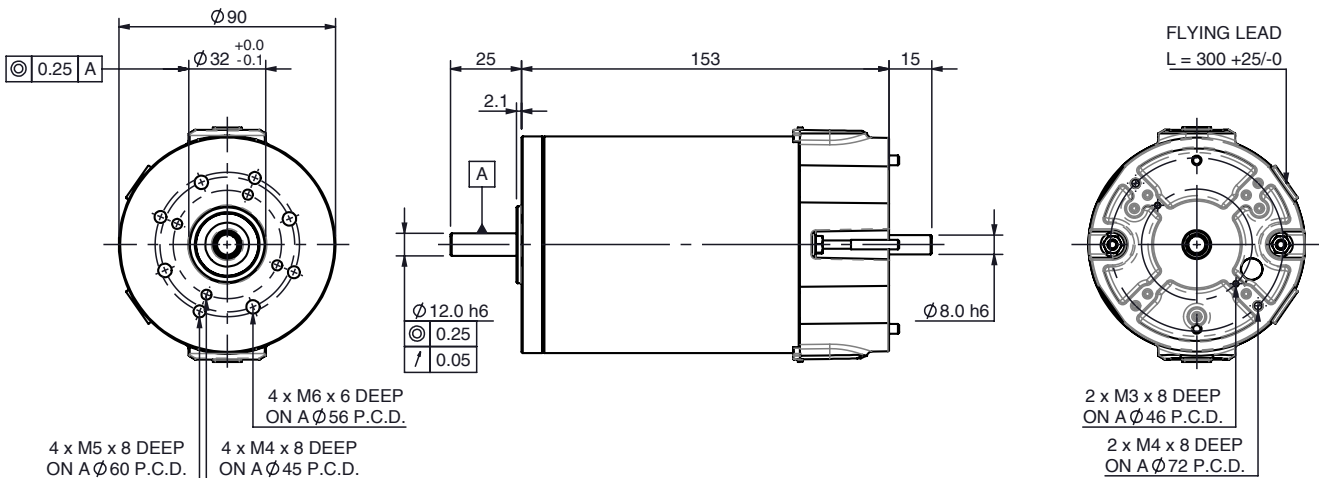
<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on BRx70-60 48V 3000 rpm motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

BRx90-50 PMDC motor

Ø90 mm frame // 50 mm stack

all dimensions in mm



| Part number key                              |                  |                                                                                                                                                                                             |                         |                         |
|----------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| Modular                                      | #####            | Please see our customisation options page for details on the modifications available on our products.<br>Advice and guidance on these options are available from your local sales engineer. |                         |                         |
| Standard                                     | #####            |                                                                                                                                                                                             |                         |                         |
| Calculated data                              | #####            |                                                                                                                                                                                             |                         |                         |
| Technical data                               |                  |                                                                                                                                                                                             |                         |                         |
| 1 Part number                                |                  | 781102                                                                                                                                                                                      | 781103                  | 781104                  |
| 2 Nominal power                              | W                | 157                                                                                                                                                                                         | 210                     | 210                     |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                          | 24                      | 48                      |
| 4 No load speed                              | rpm              | 3870                                                                                                                                                                                        | 3423                    | 3480                    |
| 5 No load current                            | A                | 2.6                                                                                                                                                                                         | 1.1                     | 0.6                     |
| 6 Nominal speed                              | rpm              | 3000                                                                                                                                                                                        | 3000                    | 3000                    |
| 7 Nominal continuous torque (S1)             | Nm               | 0.50                                                                                                                                                                                        | 0.67                    | 0.67                    |
| 8 Nominal continuous current (S1)            | A                | 25.5                                                                                                                                                                                        | 10.5                    | 5.7                     |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 1.17                                                                                                                                                                                        | 1.17                    | 1.17                    |
| 10 Stall current                             | A                | 83.7                                                                                                                                                                                        | 82.1                    | 51.8                    |
| 11 Stall torque                              | Nm               | 2.40                                                                                                                                                                                        | 5.61                    | 6.70                    |
| 12 Stack length                              | mm               | 50                                                                                                                                                                                          | 50                      | 50                      |
| 13 Maximum efficiency                        | %                | 67                                                                                                                                                                                          | 81                      | 80                      |
| 14 Terminal resistance                       | Ω                | 0.112                                                                                                                                                                                       | 0.294                   | 0.580                   |
| 15 Terminal inductance                       | mH               | 100.5                                                                                                                                                                                       | 504.4                   | 1987.0                  |
| 16 Speed constant                            | rpm/V            | 314.9                                                                                                                                                                                       | 139.0                   | 69.1                    |
| 17 Torque constant                           | Nm/A             | 0.030                                                                                                                                                                                       | 0.069                   | 0.130                   |
| 18 Speed torque gradient                     | rpm/Nm           | 1509.7                                                                                                                                                                                      | 590.0                   | 511.0                   |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 6.57 x 10 <sup>-4</sup>                                                                                                                                                                     | 6.57 x 10 <sup>-4</sup> | 6.57 x 10 <sup>-4</sup> |

| Thermal data                          |        |          | Compatible products |        |            |     |
|---------------------------------------|--------|----------|---------------------|--------|------------|-----|
| 20 Ambient temperature                | °C     | 40       |                     |        |            |     |
|                                       |        |          |                     |        |            |     |
| Mechanical data                       |        |          | Gearbox             |        | Brake      |     |
| 21 Radial load [distance from flange] | N [mm] | 200 [15] | Page #              | Page # | Controller |     |
|                                       |        |          | GB12                | 76     | 1.5 Nm     | 118 |
|                                       |        |          | GB9                 | 78     | SC 50/15   |     |
|                                       |        |          | GB65                | 79     | 120        |     |
|                                       |        |          |                     |        |            |     |
| Other data                            |        |          | Encoder             |        |            |     |
| 22 Number of poles                    |        | 2        |                     | Page # |            |     |
| 23 Weight                             | Kg     | 3.60     | Incr. 5-pin         | 116    |            |     |
| 24 IP rating                          |        | IP54     | Incr. 10-pin        | 116    |            |     |
| 25 Enclosure                          |        | Enclosed | Diff. 10-pin        | 117    |            |     |
| 26 Insulation Class                   |        | F        |                     |        |            |     |
| 27 Reversible                         |        | Yes      |                     |        |            |     |
|                                       |        |          |                     |        |            |     |

BRx90-50 combinations

Quickview - combination drawing and technical data

| Combination drawing | Technical data |                         |           |       |           |      |
|---------------------|----------------|-------------------------|-----------|-------|-----------|------|
| BRx90-50-GB12       |                | Gear material           | Bronze    |       | Bronze    |      |
|                     |                | Gear ratio <sup>1</sup> | :1        | 15    | 30        | 60   |
|                     |                | Speed                   | rpm       | 200.0 | 100.0     | 50.0 |
|                     |                | Nominal torque          | Nm        | 7.5   | 13.1      | 20.1 |
|                     |                | Intermittent torque     | Nm        | 13.2  | 22.8      | 35.1 |
| BRx90-50-GB9        |                | Gear material           | Composite |       | Composite |      |
|                     |                | Gear ratio <sup>1</sup> | :1        | 15    | 30        | 60   |
|                     |                | Speed                   | rpm       | 200.0 | 100.0     | 50.0 |
|                     |                | Nominal torque          | Nm        | 8.5   | 15.1      | 26.1 |
|                     |                | Intermittent torque     | Nm        | 14.9  | 26.3      | 45.6 |
| BRx90-50-GB65       |                | Gear material           | Bronze    |       | Bronze    |      |
|                     |                | Gear ratio <sup>1</sup> | :1        | 20    | 40        | 80   |
|                     |                | Speed                   | rpm       | 150.0 | 75.0      | 37.5 |
|                     |                | Nominal torque          | Nm        | 10.9  | 20.4      | 48.2 |
|                     |                | Intermittent torque     | Nm        | 19.0  | 35.6      | 65.5 |

Key

Modular combination / modular gear ratio

Notes

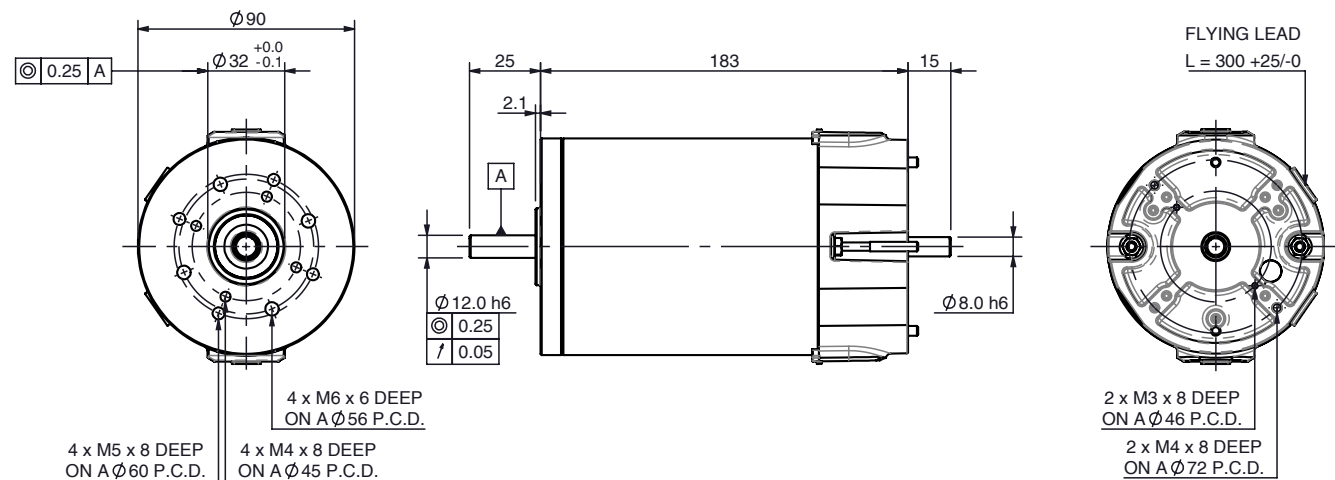
<sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at parvalux.com

- Technical data displayed above calculated based on **BRx90-50 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

PMDC motor

Ø90 mm frame // 75 mm stack

all dimensions in mm



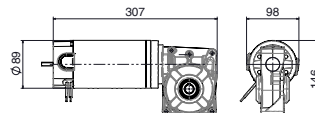
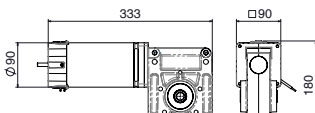
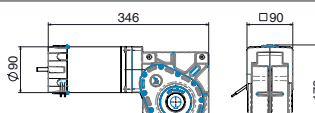
| Part number key                              |                  |                                                                                                                                                                                                    |                         |                         |
|----------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| Modular                                      | #####            | <b>Please see our customisation options page for details on the modifications available on our products.</b><br>Advice and guidance on these options are available from your local sales engineer. |                         |                         |
| Standard                                     | #####            |                                                                                                                                                                                                    |                         |                         |
| Calculated data                              | #####            |                                                                                                                                                                                                    |                         |                         |
| Technical data                               |                  |                                                                                                                                                                                                    |                         |                         |
| 1 Part number                                |                  | 781106                                                                                                                                                                                             | 781107                  | 781108                  |
| 2 Nominal power                              | W                | 236                                                                                                                                                                                                | 283                     | 283                     |
| 3 Nominal voltage                            | V                | 12                                                                                                                                                                                                 | 24                      | 48                      |
| 4 No load speed                              | rpm              | 3750                                                                                                                                                                                               | 3417                    | 3376                    |
| 5 No load current                            | A                | 3.4                                                                                                                                                                                                | 1.2                     | 0.6                     |
| 6 Nominal speed                              | rpm              | 2500                                                                                                                                                                                               | 3000                    | 3000                    |
| 7 Nominal continuous torque (S1)             | Nm               | 0.9                                                                                                                                                                                                | 0.9                     | 0.9                     |
| 8 Nominal continuous current (S1)            | A                | 33.2                                                                                                                                                                                               | 14.5                    | 7.3                     |
| 9 Max. intermittent torque (S2 - 15 minutes) | Nm               | 1.50                                                                                                                                                                                               | 1.50                    | 1.50                    |
| 10 Stall current                             | A                | 83.5                                                                                                                                                                                               | 93.0                    | 58.0                    |
| 11 Stall torque                              | Nm               | 2.38                                                                                                                                                                                               | 6.14                    | 7.71                    |
| 12 Stack length                              | mm               | 75                                                                                                                                                                                                 | 75                      | 75                      |
| 13 Maximum efficiency                        | %                | 69                                                                                                                                                                                                 | 79                      | 80                      |
| 14 Terminal resistance                       | Ω                | 0.116                                                                                                                                                                                              | 0.312                   | 0.426                   |
| 15 Terminal inductance                       | mH               | 78.3                                                                                                                                                                                               | 422.3                   | 1620.0                  |
| 16 Speed constant                            | rpm/V            | 311.3                                                                                                                                                                                              | 135.9                   | 68.0                    |
| 17 Torque constant                           | Nm/A             | 0.03                                                                                                                                                                                               | 0.07                    | 0.13                    |
| 18 Speed torque gradient                     | rpm/Nm           | 1667.4                                                                                                                                                                                             | 5471                    | 433.0                   |
| 19 Rotor inertia                             | gcm <sup>2</sup> | 8.65 x 10 <sup>-4</sup>                                                                                                                                                                            | 8.65 x 10 <sup>-4</sup> | 8.65 x 10 <sup>-4</sup> |

| Thermal data                          |        |          |
|---------------------------------------|--------|----------|
| 20 Ambient temperature                | °C     | 40       |
|                                       |        |          |
| Mechanical data                       |        |          |
| 21 Radial load [distance from flange] | N [mm] | 200 [15] |
|                                       |        |          |
| Other data                            |        |          |
| 22 Number of poles                    |        | 2        |
| 23 Weight                             | Kg     | 4.00     |
| 24 IP rating                          |        | IP54     |
| 25 Enclosure                          |        | Enclosed |
| 26 Insulation Class                   |        | F        |
| 27 Reversible                         |        | Yes      |
|                                       |        |          |
|                                       |        |          |

| Compatible products |  |        |  |              |  |        |  |            |  |        |  |
|---------------------|--|--------|--|--------------|--|--------|--|------------|--|--------|--|
| Gearbox             |  | Page # |  | Brake        |  | Page # |  | Controller |  | Page # |  |
| GB12                |  | 76     |  | 1.5 Nm       |  | 118    |  | SC 50/15   |  | 120    |  |
| GB9                 |  | 78     |  |              |  |        |  |            |  |        |  |
| GB65                |  | 79     |  |              |  |        |  |            |  |        |  |
|                     |  |        |  | Encoder      |  | Page # |  |            |  |        |  |
|                     |  |        |  | Incr. 5-pin  |  | 116    |  |            |  |        |  |
|                     |  |        |  | Incr. 10-pin |  | 116    |  |            |  |        |  |
|                     |  |        |  | Diff. 10-pin |  | 117    |  |            |  |        |  |

## BRx90-75 combinations

### Quickview - combination drawing and technical data

| Combination drawing |                                                                                     | Technical data          |     |           |           |           |        |        |
|---------------------|-------------------------------------------------------------------------------------|-------------------------|-----|-----------|-----------|-----------|--------|--------|
| BRX90-75-QB12       |  | Gear material           |     | Bronze    | Bronze    | Bronze    |        |        |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1  | 15        | 30        | 60        |        |        |
|                     |                                                                                     | Speed                   | rpm | 200.0     | 100.0     | 50.0      |        |        |
|                     |                                                                                     | Nominal torque          | Nm  | 10.1      | 17.6      | 27.0      |        |        |
|                     |                                                                                     | Intermittent torque     | Nm  | 16.9      | 29.3      | 45.0      |        |        |
| BRX90-75-QB9        |  | Gear material           |     | Composite | Composite | Composite |        |        |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1  | 15        | 30        | 60        |        |        |
|                     |                                                                                     | Speed                   | rpm | 200.0     | 100.0     | 50.0      |        |        |
|                     |                                                                                     | Nominal torque          | Nm  | 11.5      | 20.3      | 35.1      |        |        |
|                     |                                                                                     | Intermittent torque     | Nm  | 19.1      | 33.8      | 58.5      |        |        |
| BRX90-75-QB65       |  | Gear material           |     | Bronze    | Bronze    | Bronze    | Bronze | Bronze |
|                     |                                                                                     | Gear ratio <sup>1</sup> | :1  | 20        | 40        | 80        | 120    | 160    |
|                     |                                                                                     | Speed                   | rpm | 150.0     | 75.0      | 37.5      | 25.0   | 18.8   |
|                     |                                                                                     | Nominal torque          | Nm  | 14.6      | 27.4      | 50.4      | 64.8   | 61.9   |
|                     |                                                                                     | Intermittent torque     | Nm  | 24.3      | 45.6      | 84.0      | 108.0  | 103.2  |

| Key                                      | Notes                                                                                                                                                     |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modular combination / modular gear ratio | <sup>1</sup> Full, non-modular gear ratio options displayed in our latest product range catalogue found at <a href="http://parvalux.com">parvalux.com</a> |

→ Technical data displayed above calculated based on **BRx90-75 48V 3000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.

→ Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.

# Modular gearboxes

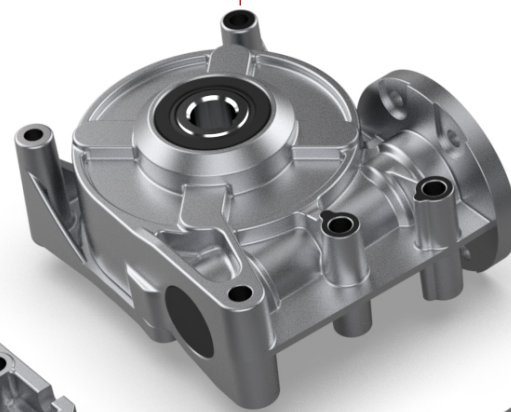
Our modular gearboxes integrate seamlessly with our modular motors through use of intelligently designed mounting flanges. The range includes options for right-angle and inline output orientation, varying gear ratios, and the choice between composite, bronze and steel gears.

Explore the range over the next few pages or scan the QR code to view the range online and begin building your modular range solution.



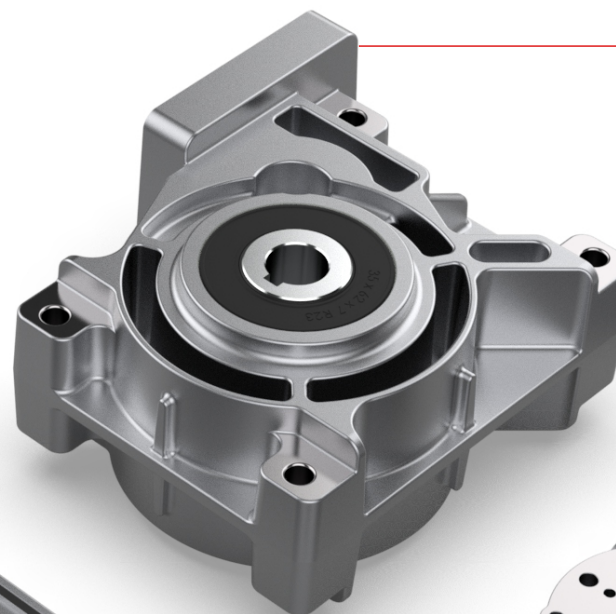
## GB12

- 15:1 / 30:1 / 60:1 gear ratio
- Bronze gears
- Shaft extension kit 735903



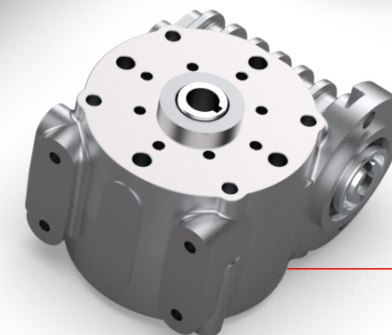
## GB65

- 20:1 / 40:1 / 80:1 / 120:1 / 160:1 gear ratio
- Bronze and steel gears
- Shaft extension kit 854742



## GB56

- 30:1 / 40:1 / 48:1 / 60:1 / 70:1 gear ratio
- Composite gears



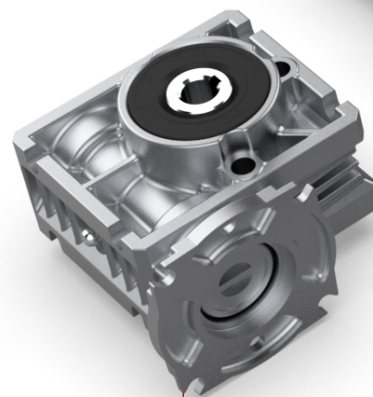
## GB80

- 15:1 / 30:1 / 60:1 gear ratio
- Composite gears
- Shaft extension kit 860809



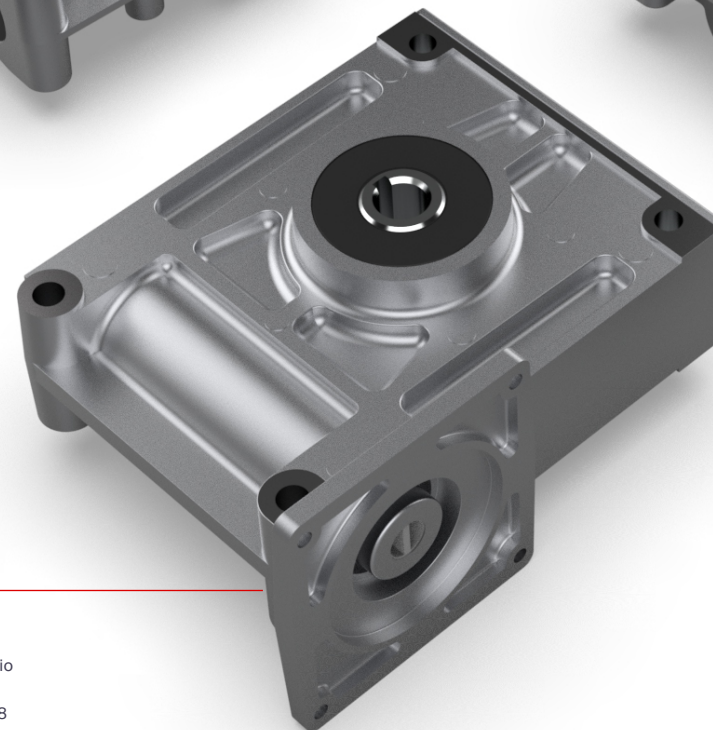
## GB28

- 15:1 / 30:1 / 60:1 gear ratio
- Bronze gears
- Shaft extension kit 735908



## GB9

- 15:1 / 30:1 / 60:1 gear ratio
- Composite gears
- Shaft extension kit 735898



## PGx42

- 1 - 4 stage
- 4.3:1 / 19:1 / 66:1 / 150:1 / 353:1 gear ratio
- Composite gears

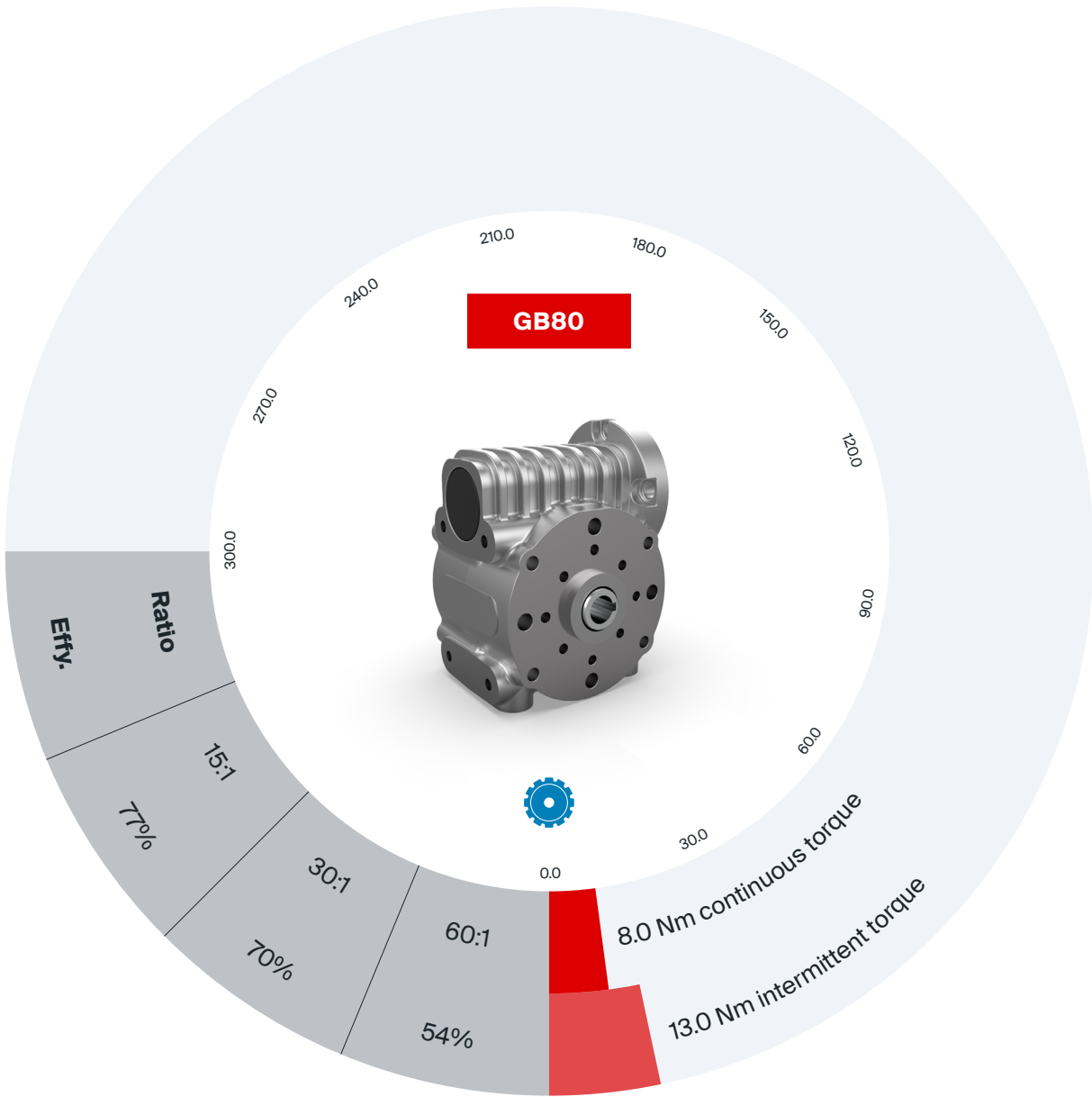
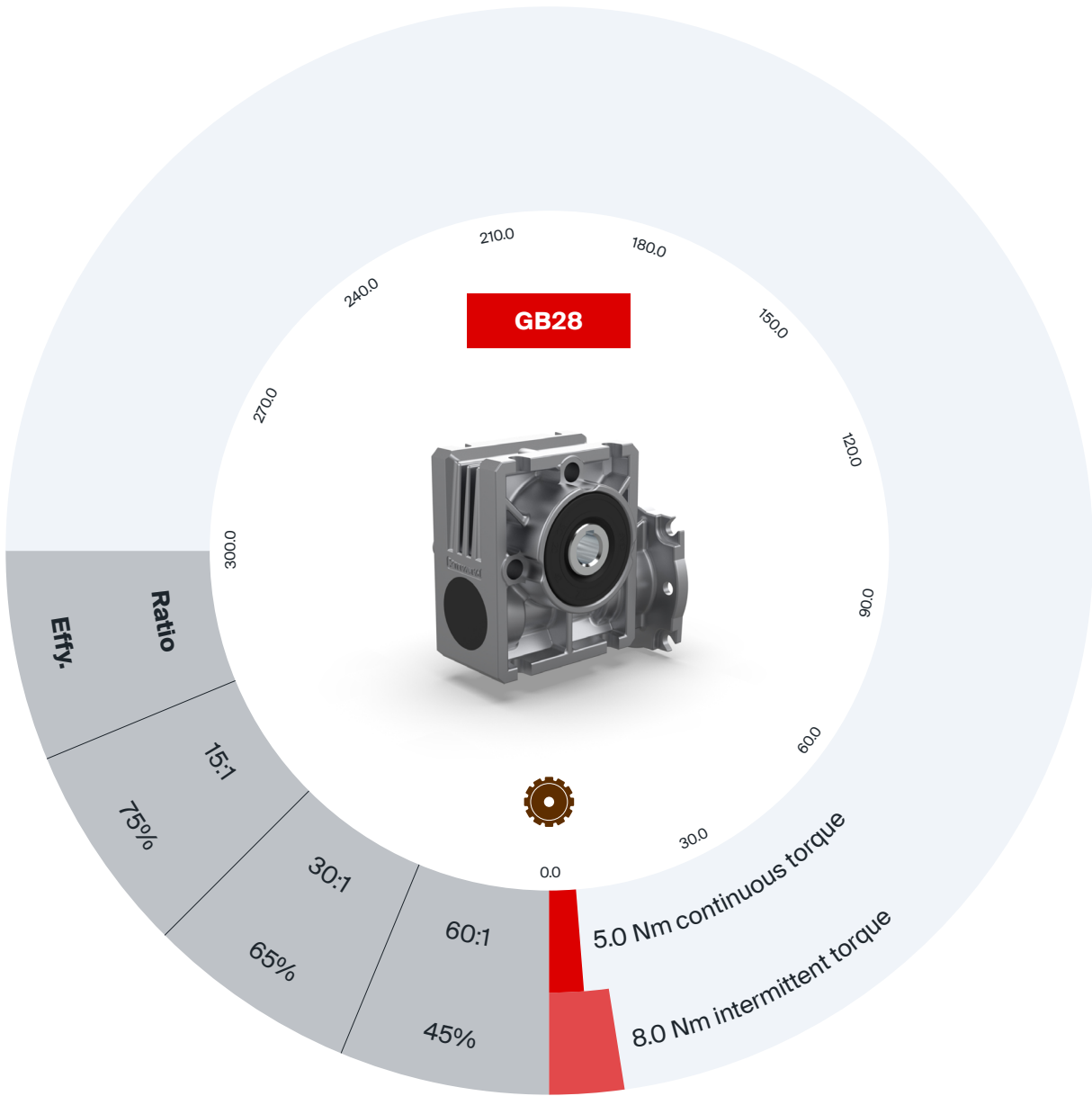


Overview - right-angle

# Gearboxes

Supplied as standard with a hollow shaft, our right-angle modular gearbox range includes 6 models of varying sizes. With a range of options for gear ratio, as well as the possibility of adding a shaft extension kit to your selection, the range can be modified to meet your exact specification.

| Gear material                                                                       |           |
|-------------------------------------------------------------------------------------|-----------|
|  | Composite |
|  | Bronze    |
|  | Steel     |

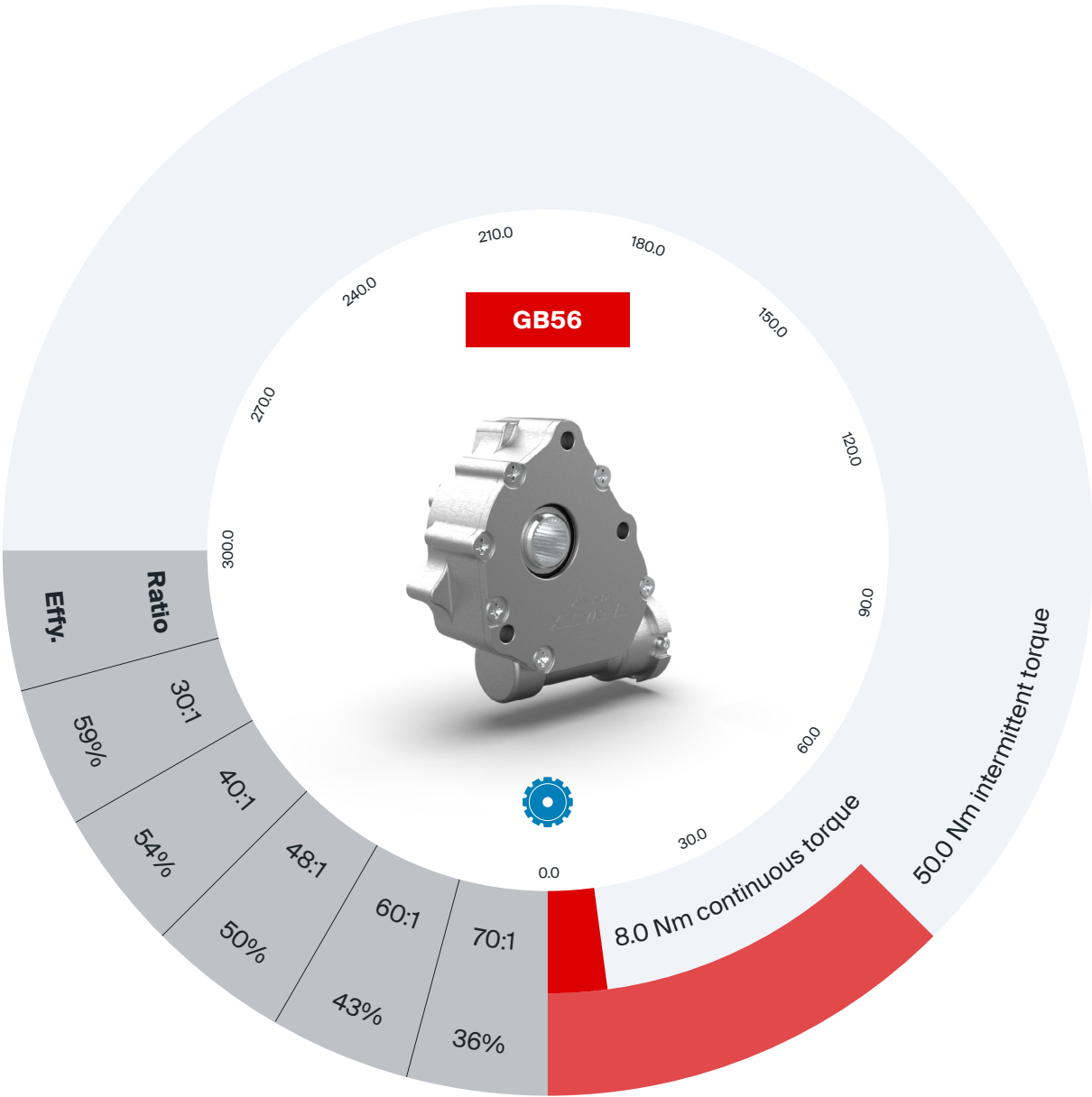
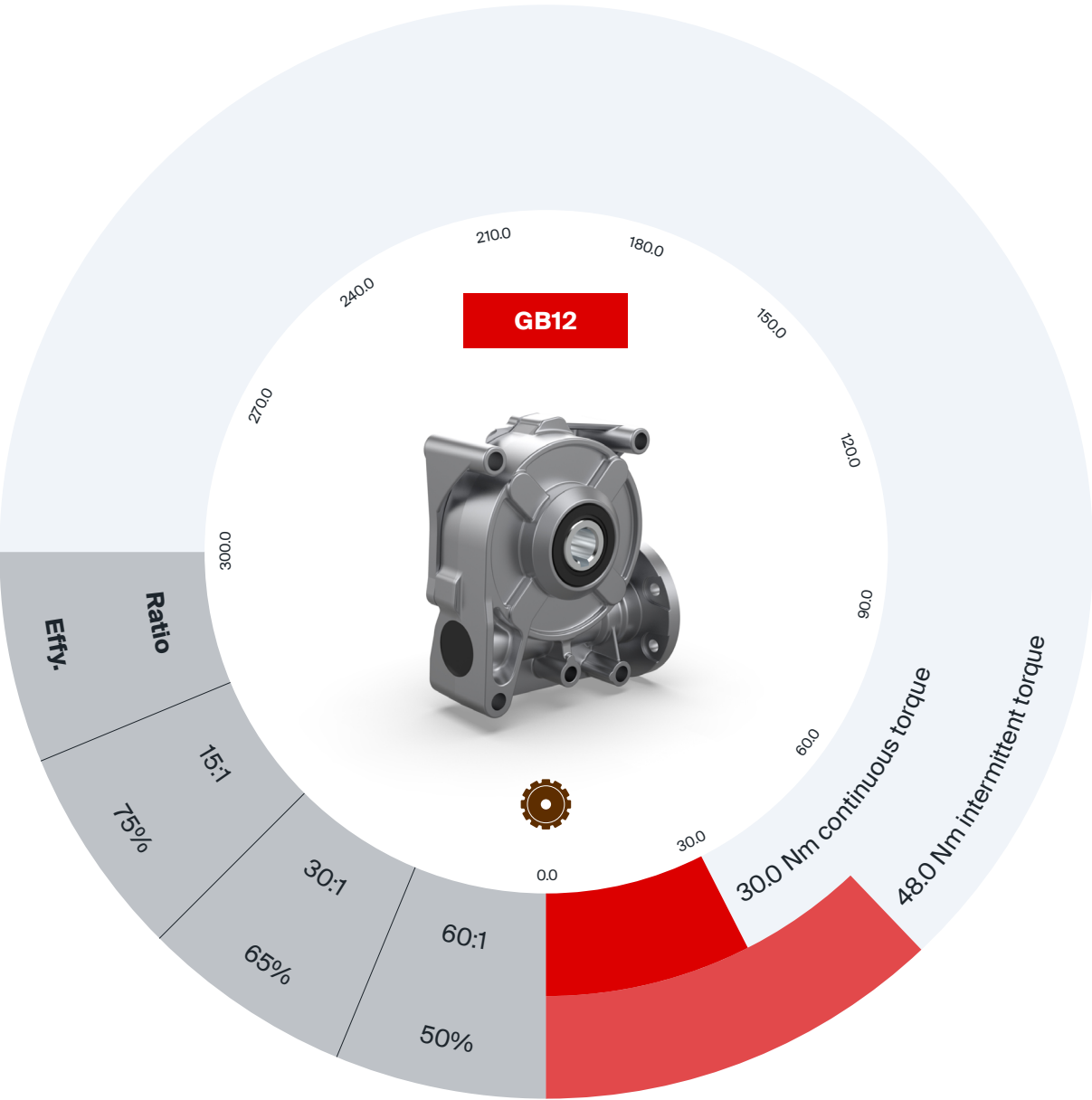


Overview - right-angle

# Gearboxes

Supplied as standard with a hollow shaft, our right-angle modular gearbox range includes 6 models of varying sizes. With a range of options for gear ratio, as well as the possibility of adding a shaft extension kit to your selection, the range can be modified to meet your exact specification.

| Gear material                                                                       |           |
|-------------------------------------------------------------------------------------|-----------|
|  | Composite |
|  | Bronze    |
|  | Steel     |

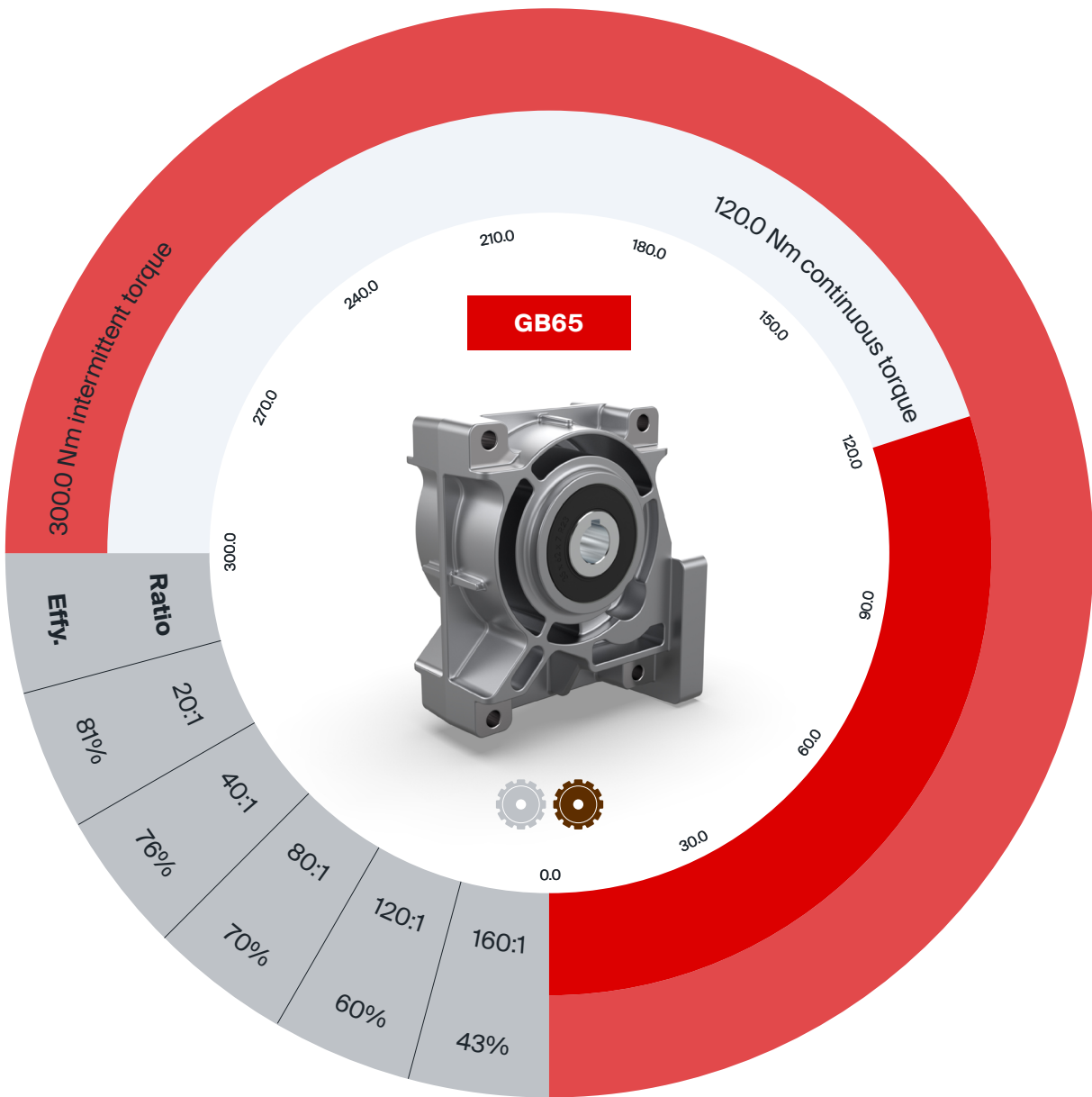
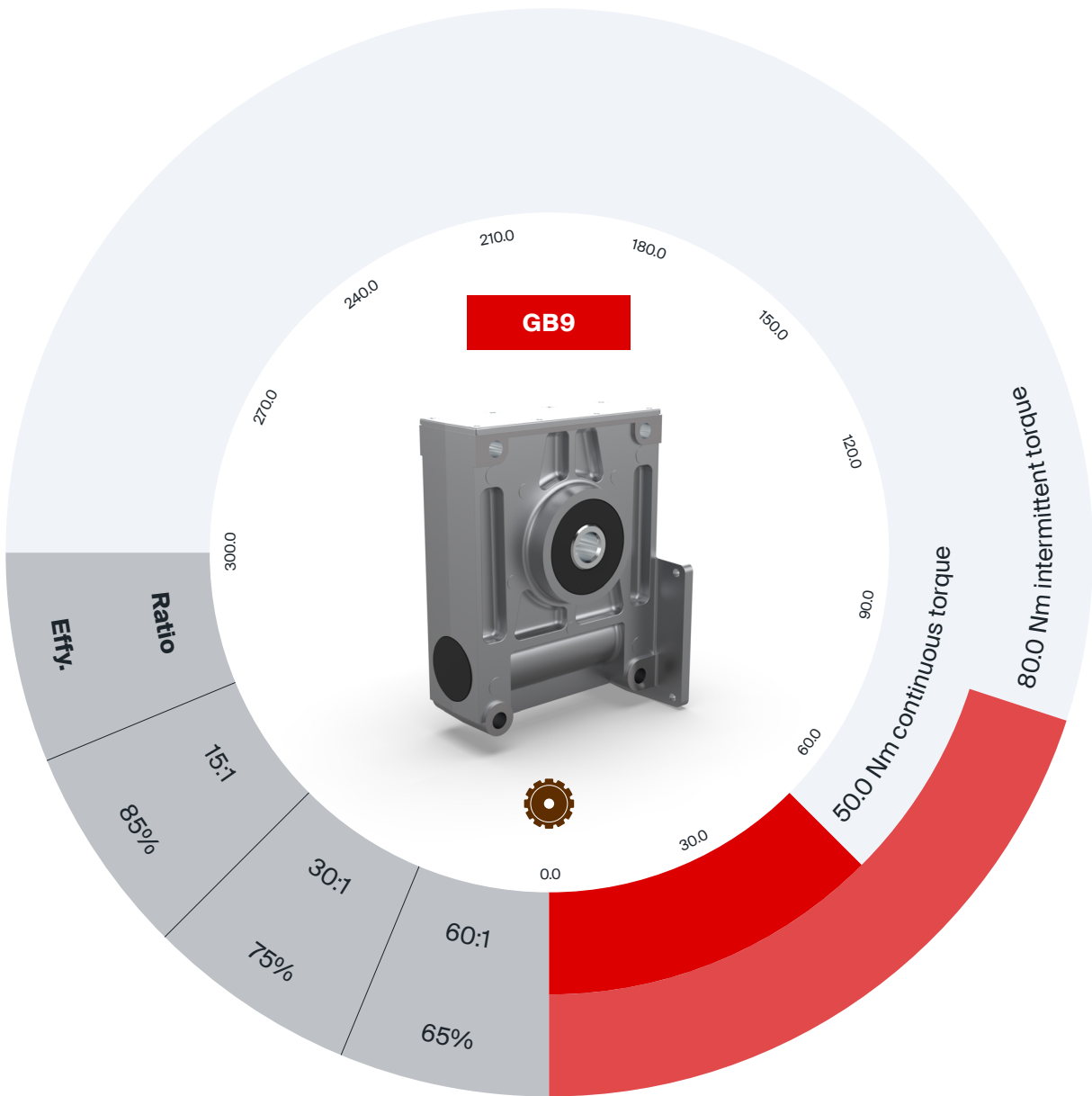


Overview - right-angle

# Gearboxes

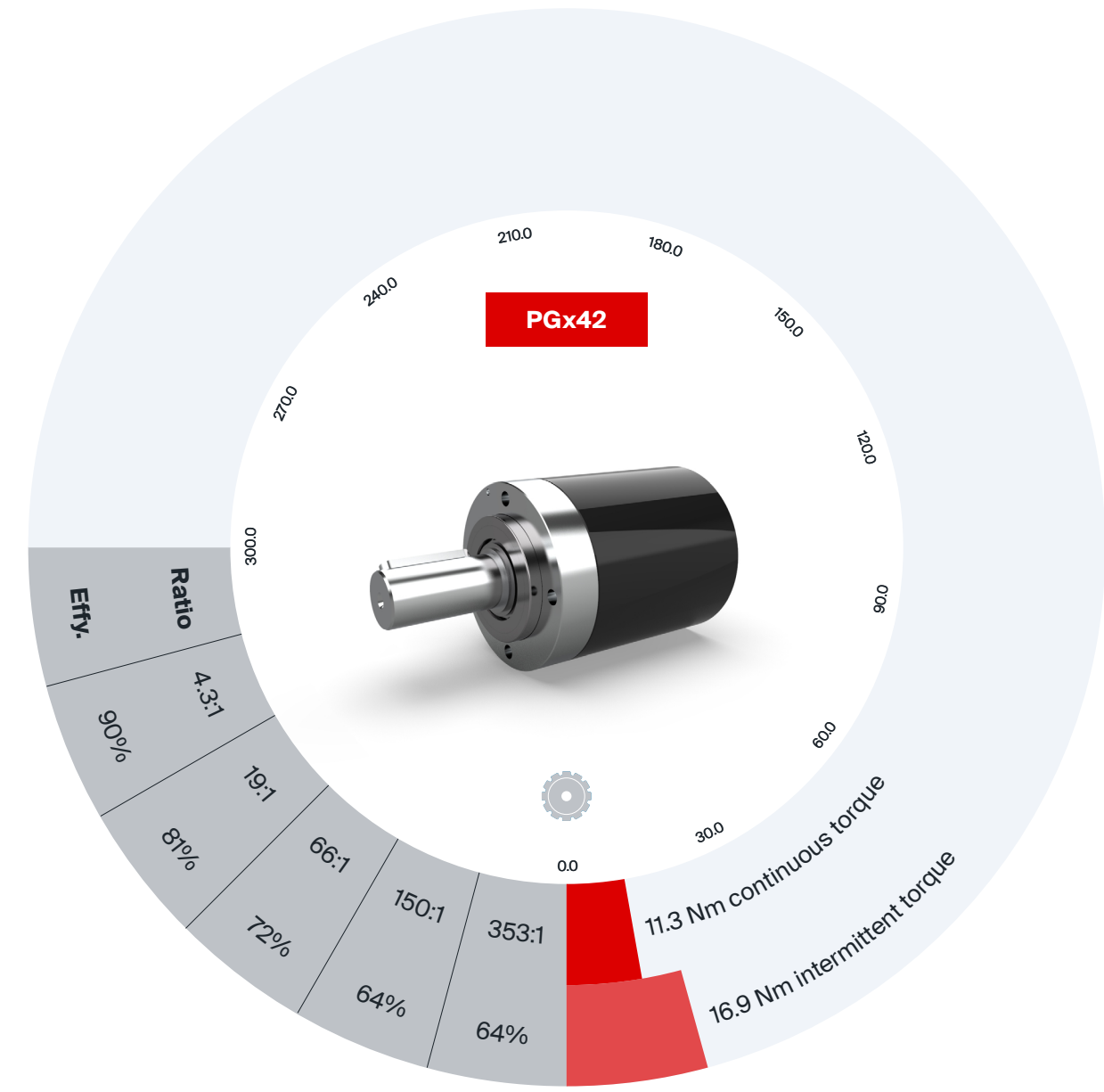
Supplied as standard with a hollow shaft, our right-angle modular gearbox range includes 6 models of varying sizes. With a range of options for gear ratio, as well as the possibility of adding a shaft extension kit to your selection, the range can be modified to meet your exact specification.

| Gear material                                                                       |           |
|-------------------------------------------------------------------------------------|-----------|
|  | Composite |
|  | Bronze    |
|  | Steel     |



Overview - inline

# Gearboxes



Our inline modular gearbox range currently only includes one frame size - the PGx42. This planetary gearbox is available as either 1, 2, 3, or 4 stage and offers 5 different gear ratios - allowing you to customise the gearbox to your specification.

| Gear material                                                                       |           |
|-------------------------------------------------------------------------------------|-----------|
|  | Composite |
|  | Bronze    |
|  | Steel     |

Future additions

Future additions to the inline modular gearbox range includes two more planetary gearboxes - the PGx52 and PGx70. These new gearboxes will extend the range with two larger options that will be compatible with a wider range of modular gearboxes. Calculated data for these gearboxes can be found below.

| PGx52                    |    |     |      |      |      |
|--------------------------|----|-----|------|------|------|
| Gear ratio               | :1 | 5.3 | 16   | 63   | 111  |
| Stage                    |    | 1   | 2    | 3    | 3    |
| Max. continuous torque   | Nm | 5.0 | 15.0 | 30.0 | 30.0 |
| Max. intermittent torque | Nm | 7.0 | 23.0 | 45.0 | 45.0 |
| Efficiency               | %  | 95  | 92   | 89   | 89   |

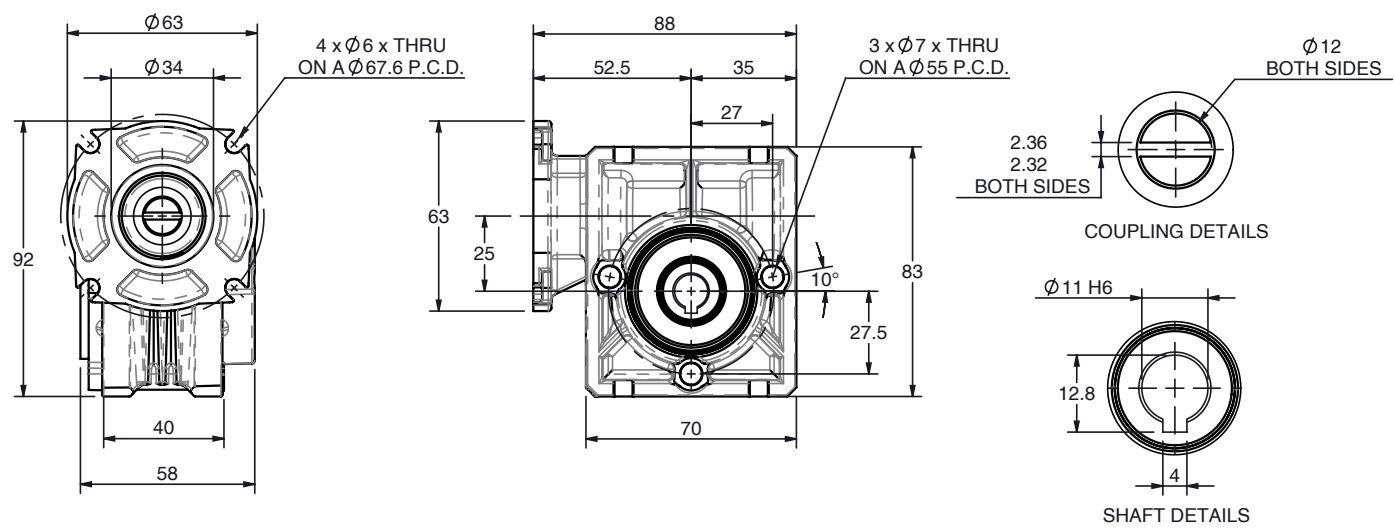
| PGx70                    |    |      |      |      |
|--------------------------|----|------|------|------|
| Gear ratio               | :1 | 3.9  | 16   | 21   |
| Stage                    |    | 1    | 2    | 2    |
| Max. continuous torque   | Nm | 10.0 | 30.0 | 30.0 |
| Max. intermittent torque | Nm | 12.5 | 37.5 | 37.5 |
| Efficiency               | %  | 95   | 92   | 92   |

Data above is estimated, calculated data and is subject to change

GB28

Right-angle gearbox // Bronze gears

15:1 - 60:1 ratio // 8.0 Nm



| Part number key                             |         |                                                                                                                                                                                                                                |        |        |
|---------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| Modular                                     | #####   | Standard version of the GB28 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |        |        |
| Standard                                    | #####   |                                                                                                                                                                                                                                |        |        |
| Calculated data                             | #####   |                                                                                                                                                                                                                                |        |        |
| Technical data                              |         |                                                                                                                                                                                                                                |        |        |
| 1 Part number                               |         | 735904                                                                                                                                                                                                                         | 735906 | 735907 |
| 2 Gear ratio                                | :1      | 15                                                                                                                                                                                                                             | 30     | 60     |
| 3 Stages                                    |         | 1                                                                                                                                                                                                                              | 1      | 1      |
| 4 Max. continuous torque (S1) <sup>12</sup> | Nm      | 5.0                                                                                                                                                                                                                            | 5.0    | 5.0    |
| 5 Max. intermittent torque <sup>2</sup>     | Nm      | 8.0                                                                                                                                                                                                                            | 8.0    | 8.0    |
| 6 Efficiency                                | %       | 75                                                                                                                                                                                                                             | 65     | 45     |
| 7 Backlash                                  | arc.min | 10-25                                                                                                                                                                                                                          | 10-25  | 10-25  |
| 8 Max. axial load (dynamic)                 | N       | 300                                                                                                                                                                                                                            | 300    | 300    |
| 9 Max. radial load, 12 mm from flange       | N       | 400                                                                                                                                                                                                                            | 400    | 400    |
| 10 Weight                                   | Kg      | 0.83                                                                                                                                                                                                                           | 0.83   | 0.83   |
| 11 Gear material                            |         | Bronze                                                                                                                                                                                                                         | Bronze | Bronze |

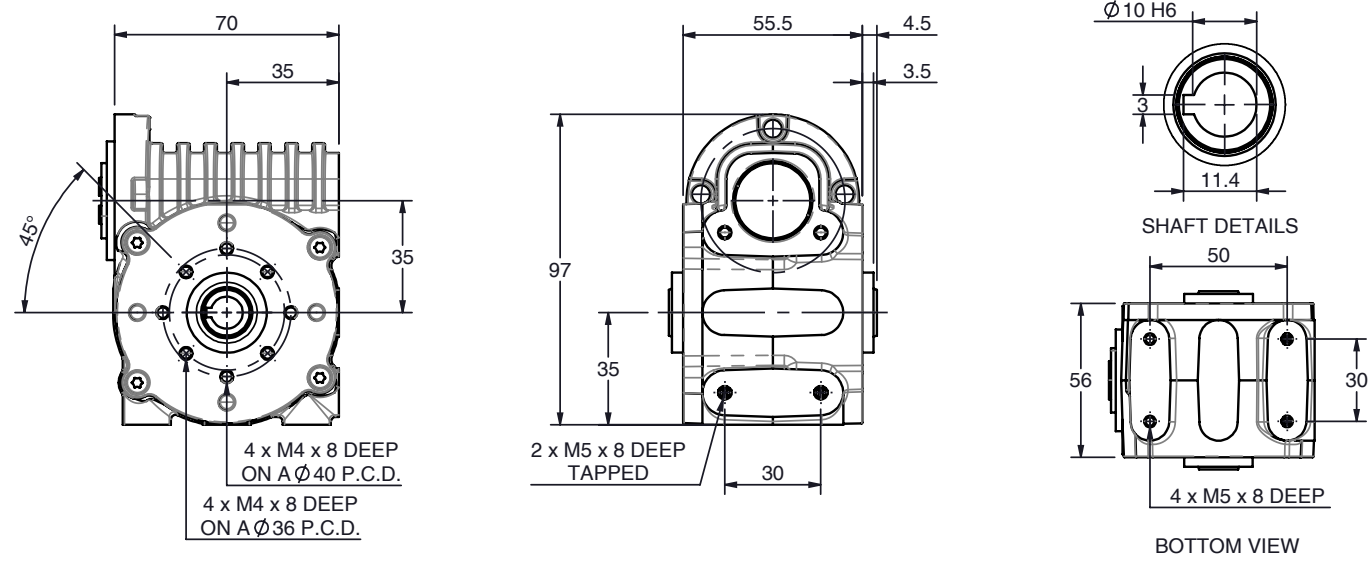
<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

| Compatible products     |        |          |        |
|-------------------------|--------|----------|--------|
| BLDC                    | Page # | PMDC     | Page # |
| PBL42-15                |        | BRx63-25 |        |
| PBL42-30                |        | BRx63-55 |        |
| PBL60-50                |        | BRx63-25 |        |
| PBL60-70                |        | BRx63-55 |        |
| Shaft extension         |        |          |        |
| 735908                  |        |          |        |
| Gearbox output position |        |          |        |
|                         |        |          |        |

GB80

Right-angle gearbox // Composite gears

4:1 - 72:1 ratio // 13.0 Nm



| Part number key                              |         |                                                                                                                                                                                                                                |           |           |
|----------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|
| Modular                                      | #####   | Standard version of the GB80 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |           |           |
| Standard                                     | #####   |                                                                                                                                                                                                                                |           |           |
| Calculated data                              | #####   |                                                                                                                                                                                                                                |           |           |
| Technical data                               |         |                                                                                                                                                                                                                                |           |           |
| 1 Part number                                |         | 888018                                                                                                                                                                                                                         | 888020    | 888021    |
| 2 Gear ratio                                 | :1      | 15                                                                                                                                                                                                                             | 30        | 60        |
| 3 Stages                                     |         | 1                                                                                                                                                                                                                              | 1         | 1         |
| 4 Max. continuous torque (S1) <sup>1 2</sup> | Nm      | 8.0                                                                                                                                                                                                                            | 8.0       | 6.0       |
| 5 Max. intermittent torque <sup>2</sup>      | Nm      | 13.0                                                                                                                                                                                                                           | 13.0      | 10.0      |
| 6 Efficiency                                 | %       | 77                                                                                                                                                                                                                             | 70        | 54        |
| 7 Backlash                                   | arc.min | 10-25                                                                                                                                                                                                                          | 10-25     | 10-25     |
| 8 Max. axial load (dynamic)                  | N       | 300                                                                                                                                                                                                                            | 300       | 300       |
| 9 Max. radial load, 12 mm from flange        | N       | 350                                                                                                                                                                                                                            | 350       | 350       |
| 10 Weight                                    | Kg      | 0.7                                                                                                                                                                                                                            | 0.7       | 0.7       |
| 11 Gear material                             |         | Composite                                                                                                                                                                                                                      | Composite | Composite |

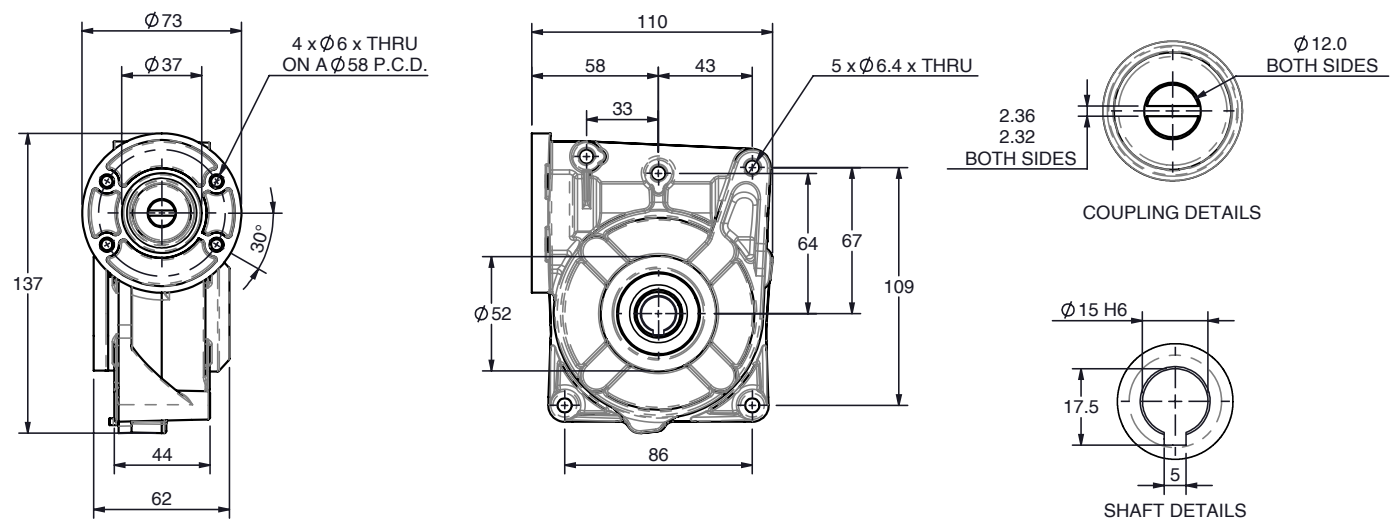
<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

| Compatible products     |        |          |        |
|-------------------------|--------|----------|--------|
| BLDC                    | Page # | PMDC     | Page # |
| PBL60-50                |        | BRx52-30 |        |
| PBL60-70                |        | BRx52-58 |        |
| PBL70-70                |        | BRx63-25 |        |
| PBL70-80                |        | BRx63-55 |        |
| Shaft extension         |        |          |        |
| 860809                  |        |          |        |
| Gearbox output position |        |          |        |
|                         |        |          |        |

GB12

Right-angle gearbox // Bronze gears

12.5:1 - 75:1 ratio // 48.0 Nm



| Part number key |                                            |                                                                                                                                                                                                                                |        |        |
|-----------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| Modular         | #####                                      | Standard version of the GB12 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |        |        |
| Standard        | #####                                      |                                                                                                                                                                                                                                |        |        |
| Calculated data | #####                                      |                                                                                                                                                                                                                                |        |        |
| Technical data  |                                            |                                                                                                                                                                                                                                |        |        |
| 1               | Part number                                | 735900                                                                                                                                                                                                                         | 735901 | 735902 |
| 2               | Gear ratio                                 | :1 15                                                                                                                                                                                                                          | 30     | 60     |
| 3               | Stages                                     | 1                                                                                                                                                                                                                              | 1      | 1      |
| 4               | Max. continuous torque (S1) <sup>1 2</sup> | Nm 30.0                                                                                                                                                                                                                        | 30.0   | 30.0   |
| 5               | Max. intermittent torque <sup>2</sup>      | Nm 48.0                                                                                                                                                                                                                        | 48.0   | 48.0   |
| 6               | Efficiency                                 | % 75                                                                                                                                                                                                                           | 65     | 50     |
| 7               | Backlash                                   | arc.min 10-25                                                                                                                                                                                                                  | 10-25  | 10-25  |
| 8               | Max. axial load (dynamic)                  | N 600                                                                                                                                                                                                                          | 600    | 600    |
| 9               | Max. radial load, 12 mm from flange        | N 800                                                                                                                                                                                                                          | 800    | 800    |
| 10              | Weight                                     | Kg 1.5                                                                                                                                                                                                                         | 1.5    | 1.5    |
| 11              | Gear material                              | Bronze                                                                                                                                                                                                                         | Bronze | Bronze |

<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

| Compatible products |        |          |        |
|---------------------|--------|----------|--------|
| BLDC                | Page # | PMDC     | Page # |
| PBL60-50            |        | BRx70-40 |        |
| PBL60-70            |        | BRx70-60 |        |
| PBL70-70            |        | BRx90-50 |        |
| PBL70-80            |        | BRx90-75 |        |
| PBL86-55            |        |          |        |
| PBL86-80            |        |          |        |

|                 |        |
|-----------------|--------|
| Shaft extension | Page # |
| 735903          | 122    |

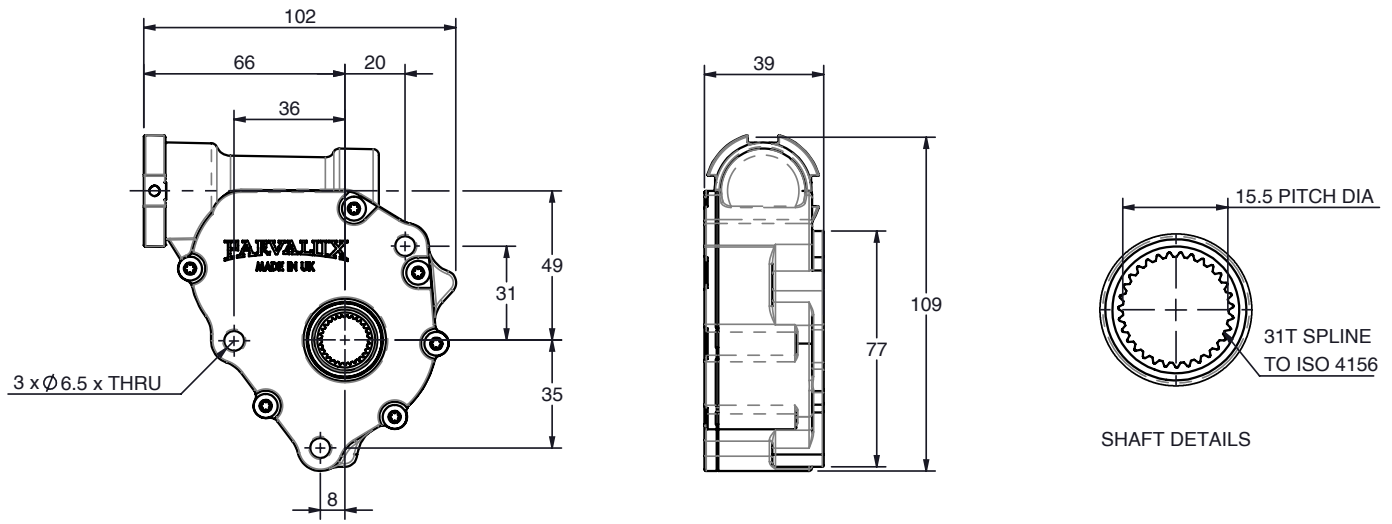
|                         |
|-------------------------|
| Gearbox output position |
| 1                       |
| 2                       |
| 3                       |
| 4                       |

(V) = ventilated

GB56

Right-angle gearbox // Composite gears

30:1 - 70:1 ratio // 50.0 Nm

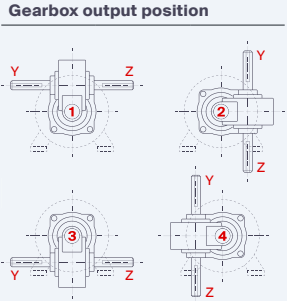


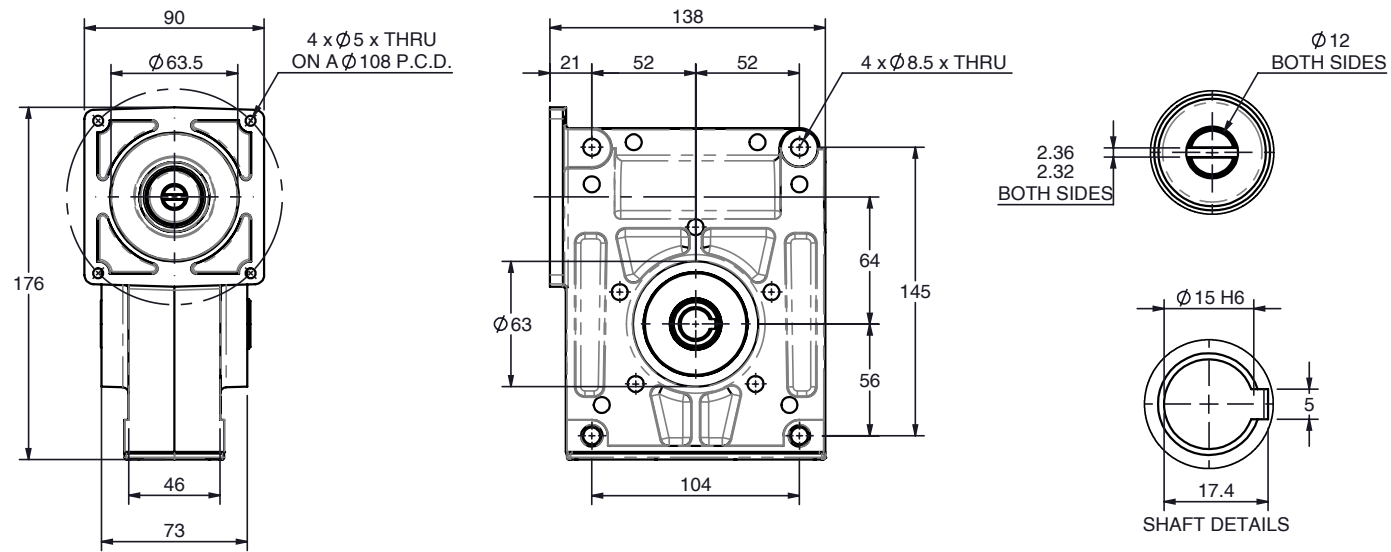
| Part number key |                                            | Standard version of the GB56 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |           |           |           |           |           |
|-----------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Modular         | #####                                      |                                                                                                                                                                                                                                |           |           |           |           |           |
| Standard        | #####                                      |                                                                                                                                                                                                                                |           |           |           |           |           |
| Calculated data | #####                                      |                                                                                                                                                                                                                                |           |           |           |           |           |
| Technical data  |                                            |                                                                                                                                                                                                                                |           |           |           |           |           |
| 1               | Part number                                |                                                                                                                                                                                                                                | 861141    | 861142    | 861143    | 861144    | 861145    |
| 2               | Gear ratio (worm)                          | :1                                                                                                                                                                                                                             | 30        | 40        | 48        | 60        | 70        |
| 3               | Gear ratio (worm)                          |                                                                                                                                                                                                                                | 3.05      | 3.05      | 3.05      | 3.05      | 3.05      |
| 4               | Stages                                     |                                                                                                                                                                                                                                | 2         | 2         | 2         | 2         | 2         |
| 5               | Max. continuous torque (S1) <sup>1 2</sup> | Nm                                                                                                                                                                                                                             | 8.0       | 8.0       | 8.0       | 8.0       | 8.0       |
| 6               | Max. intermittent torque <sup>2</sup>      | Nm                                                                                                                                                                                                                             | 50.0      | 50.0      | 50.0      | 50.0      | 50.0      |
| 7               | Efficiency                                 | %                                                                                                                                                                                                                              | 59        | 54        | 50        | 43        | 36        |
| 8               | Backlash                                   | arc.min                                                                                                                                                                                                                        | 10-25     | 10-25     | 10-25     | 10-25     | 10-25     |
| 9               | Max. axial load (dynamic)                  | N                                                                                                                                                                                                                              | 300       | 300       | 300       | 300       | 300       |
| 10              | Max. radial load, 12 mm from flange        | N                                                                                                                                                                                                                              | 400       | 400       | 400       | 400       | 400       |
| 11              | Weight                                     | Kg                                                                                                                                                                                                                             | 0.6       | 0.6       | 0.6       | 0.6       | 0.6       |
| 12              | Gear material                              |                                                                                                                                                                                                                                | Composite | Composite | Composite | Composite | Composite |

<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

| Compatible products |        |
|---------------------|--------|
| PMDC                | Page # |
| RE38-25             |        |
| RE38-40             |        |

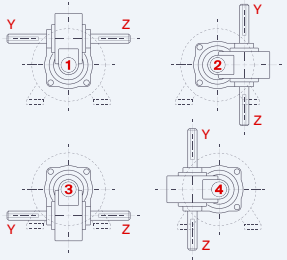
|                         |
|-------------------------|
| Gearbox output position |
| 1                       |
| 2                       |
| 3                       |
| 4                       |

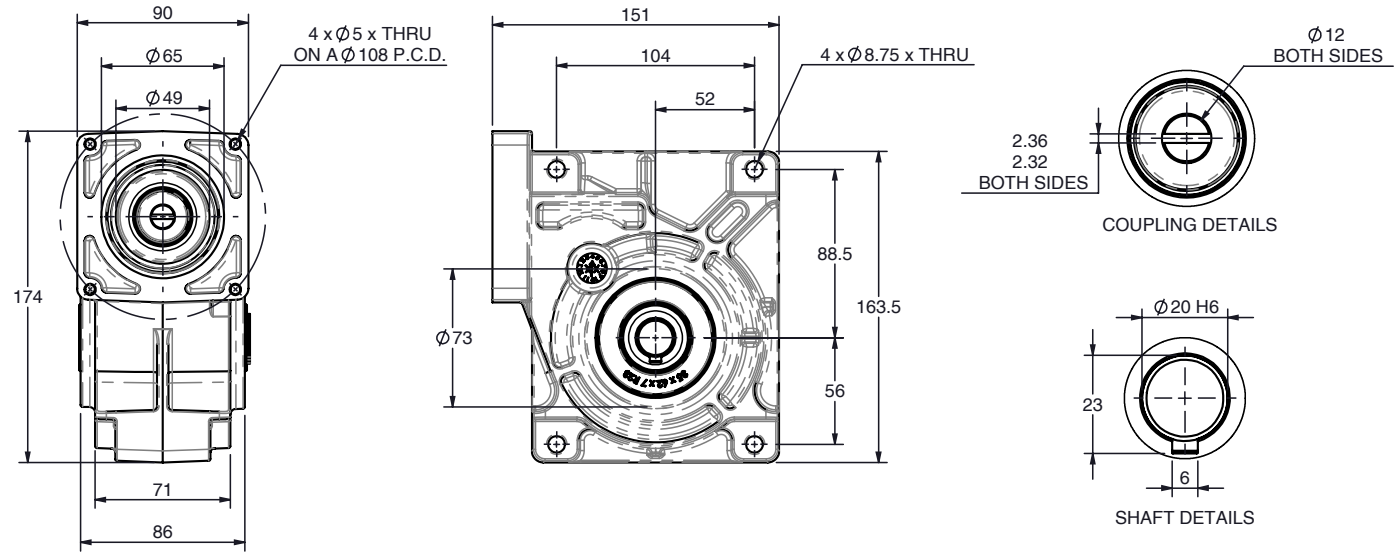




| Part number key                             |         |                                                                                                                                                                                                                               |           |           |
|---------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|
| Modular                                     | #####   | Standard version of the GB9 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |           |           |
| Standard                                    | #####   |                                                                                                                                                                                                                               |           |           |
| Calculated data                             | #####   |                                                                                                                                                                                                                               |           |           |
| Technical data                              |         |                                                                                                                                                                                                                               |           |           |
| 1 Part number                               |         | 735894                                                                                                                                                                                                                        | 735895    | 735896    |
| 2 Gear ratio                                | :1      | 15                                                                                                                                                                                                                            | 30        | 60        |
| 3 Stages                                    |         | 1                                                                                                                                                                                                                             | 1         | 1         |
| 4 Max. continuous torque (S1) <sup>12</sup> | Nm      | 50.0                                                                                                                                                                                                                          | 50.0      | 50.0      |
| 5 Max. intermittent torque <sup>2</sup>     | Nm      | 80.0                                                                                                                                                                                                                          | 80.0      | 80.0      |
| 6 Efficiency                                | %       | 85                                                                                                                                                                                                                            | 75        | 65        |
| 7 Backlash                                  | arc.min | 10-25                                                                                                                                                                                                                         | 10-25     | 10-25     |
| 8 Max. axial load (dynamic)                 | N       | 600                                                                                                                                                                                                                           | 600       | 600       |
| 9 Max. radial load, 12 mm from flange       | N       | 800                                                                                                                                                                                                                           | 800       | 800       |
| 10 Weight                                   | Kg      | 2.3                                                                                                                                                                                                                           | 2.3       | 2.3       |
| 11 Gear material                            |         | Composite                                                                                                                                                                                                                     | Composite | Composite |

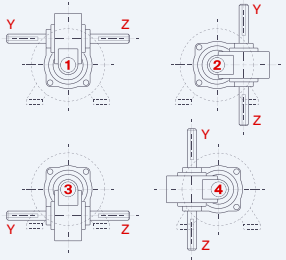
<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

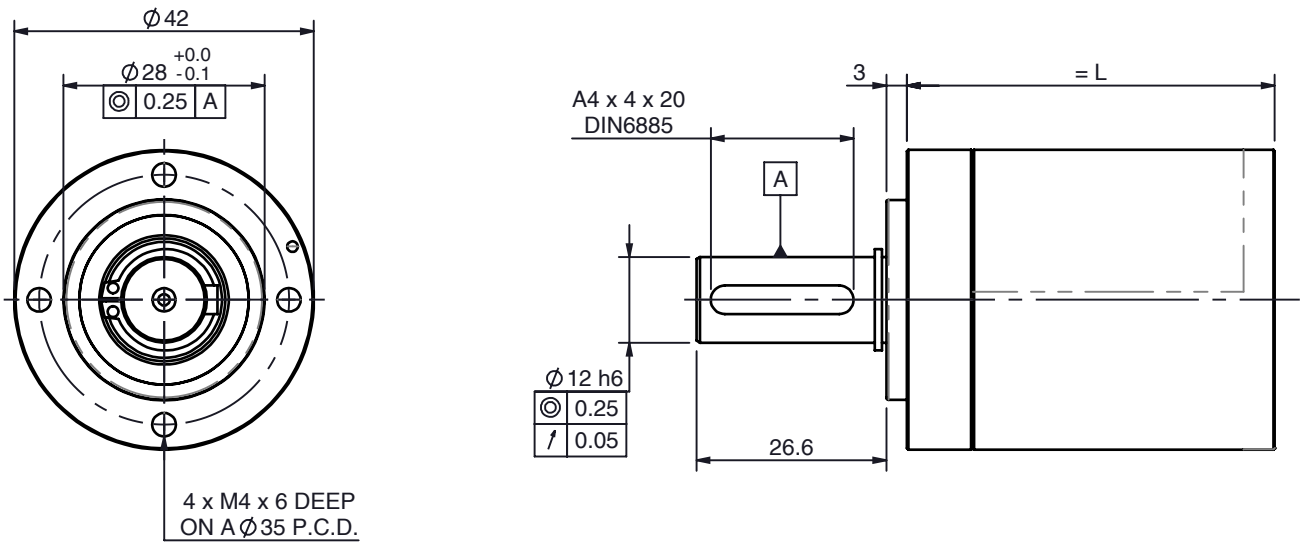
| Compatible products                                                                   |        |          |        |
|---------------------------------------------------------------------------------------|--------|----------|--------|
| BLDC                                                                                  | Page # | PMDC     | Page # |
| PBL86-55                                                                              |        | BRx90-50 |        |
| PBL86-80                                                                              |        | BRx90-75 |        |
| Shaft extension                                                                       |        |          |        |
| 735898                                                                                |        |          |        |
| Gearbox output position                                                               |        |          |        |
|  |        |          |        |



| Part number key |                                           |                                                                                                                                                                                                                                |        |        |        |        |       |
|-----------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|-------|
| Modular         | #####                                     | Standard version of the GB65 offers further customisation options, including shaft modifications and an extended range of gear ratios, etc. Advice and guidance on these options are available from your local sales engineer. |        |        |        |        |       |
| Standard        | #####                                     |                                                                                                                                                                                                                                |        |        |        |        |       |
| Calculated data | #####                                     |                                                                                                                                                                                                                                |        |        |        |        |       |
| Technical data  |                                           |                                                                                                                                                                                                                                |        |        |        |        |       |
| 1               | Part number                               | 854060                                                                                                                                                                                                                         | 853270 | 827936 | 827934 | 827943 |       |
| 2               | Gear ratio                                | :1                                                                                                                                                                                                                             | 20     | 40     | 80     | 120    | 160   |
| 3               | Stages                                    |                                                                                                                                                                                                                                | 2      | 2      | 2      | 2      | 2     |
| 4               | Max. continuous torque (S1) <sup>12</sup> | Nm                                                                                                                                                                                                                             | 120.0  | 120.0  | 120.0  | 120.0  | 120.0 |
| 5               | Max. intermittent torque <sup>2</sup>     | Nm                                                                                                                                                                                                                             | 300.0  | 300.0  | 300.0  | 300.0  | 300.0 |
| 6               | Efficiency                                | %                                                                                                                                                                                                                              | 81     | 76     | 70     | 60     | 43    |
| 7               | Backlash                                  | arc.min                                                                                                                                                                                                                        | 35-65  | 35-65  | 35-65  | 35-65  | 35-65 |
| 8               | Max. axial load (dynamic)                 | N                                                                                                                                                                                                                              | 1750   | 1750   | 1750   | 1750   | 1750  |
| 9               | Max. radial load, 12 mm from flange       | N                                                                                                                                                                                                                              | 2335   | 2335   | 2335   | 2335   | 2335  |
| 10              | Weight                                    | Kg                                                                                                                                                                                                                             | 3.5    | 3.5    | 3.5    | 3.5    | 3.5   |
| 11              | Gear material <sup>3</sup>                |                                                                                                                                                                                                                                | S / B  | S / B  | S / B  | S / B  | S / B |

<sup>1</sup> S1 duty cycle based on 3000 RPM input speed <sup>2</sup> Please refer to the thermal rating limits of the gearbox found on page 255 of our product range catalogue

| Compatible products                                                                   |        |          |        |
|---------------------------------------------------------------------------------------|--------|----------|--------|
| BLDC                                                                                  | Page # | PMDC     | Page # |
| PBL86-55                                                                              |        | BRx90-50 |        |
| PBL86-80                                                                              |        | BRx90-75 |        |
| Shaft extension                                                                       |        |          |        |
| 854742                                                                                |        |          |        |
| Gearbox output position                                                               |        |          |        |
|  |        |          |        |



| Part number key |                                          |                                                                                                                                                                                                             |           |           |           |           |           |
|-----------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Modular         | #####                                    | Planetary gearboxes are only available as part of a motor-gearbox combination and cannot be purchased as a gearbox-only unit. Please contact your local sales engineer to discuss your combination options. |           |           |           |           |           |
| Standard        | #####                                    |                                                                                                                                                                                                             |           |           |           |           |           |
| Calculated data | #####                                    |                                                                                                                                                                                                             |           |           |           |           |           |
| Technical data  |                                          |                                                                                                                                                                                                             |           |           |           |           |           |
| 1               | Part number                              |                                                                                                                                                                                                             | 891037    | 891038    | 891039    | 891040    | 891041    |
| 2               | Gear ratio                               | :1                                                                                                                                                                                                          | 4.3       | 19        | 66        | 150       | 353       |
| 3               | Stages                                   |                                                                                                                                                                                                             | 1         | 2         | 3         | 4         | 4         |
| 4               | Max. continuous torque (S1) <sup>1</sup> | Nm                                                                                                                                                                                                          | 2.3       | 5.6       | 11.3      | 11.3      | 11.3      |
| 5               | Max. intermittent torque                 | Nm                                                                                                                                                                                                          | 3.4       | 8.5       | 16.9      | 16.9      | 16.9      |
| 6               | Efficiency                               | %                                                                                                                                                                                                           | 90        | 81        | 72        | 64        | 64        |
| 7               | Backlash                                 | arc.min                                                                                                                                                                                                     | 36        | 48        | 60        | 60        | 60        |
| 8               | Max. axial load (dynamic)                | N                                                                                                                                                                                                           | 150       | 150       | 150       | 150       | 150       |
| 9               | Max. radial load, 12 mm from flange      | N                                                                                                                                                                                                           | 120       | 240       | 360       | 360       | 360       |
| 10              | Weight                                   | Kg                                                                                                                                                                                                          | 0.26      | 0.36      | 0.46      | 0.56      | 0.56      |
| 11              | Gear material                            |                                                                                                                                                                                                             | Steel     | Steel     | Steel     | Steel     | Steel     |
| 12              | Max. continuous input speed              | rpm                                                                                                                                                                                                         | 6000      | 6000      | 6000      | 6000      | 6000      |
| 13              | Max. intermittent input speed            | rpm                                                                                                                                                                                                         | 8000      | 8000      | 8000      | 8000      | 8000      |
| 14              | Ambient temperature                      | °C                                                                                                                                                                                                          | -40...100 | -40...100 | -40...100 | -40...100 | -40...100 |
| 15              | Max. transmissible power                 | W                                                                                                                                                                                                           | 580       | 580       | 580       | 580       | 580       |
| 16              | Length                                   | mm                                                                                                                                                                                                          | 37.3      | 51.8      | 66.3      | 80.8      | 80.8      |

<sup>1</sup> S1 duty cycle based on 3000 RPM input speed

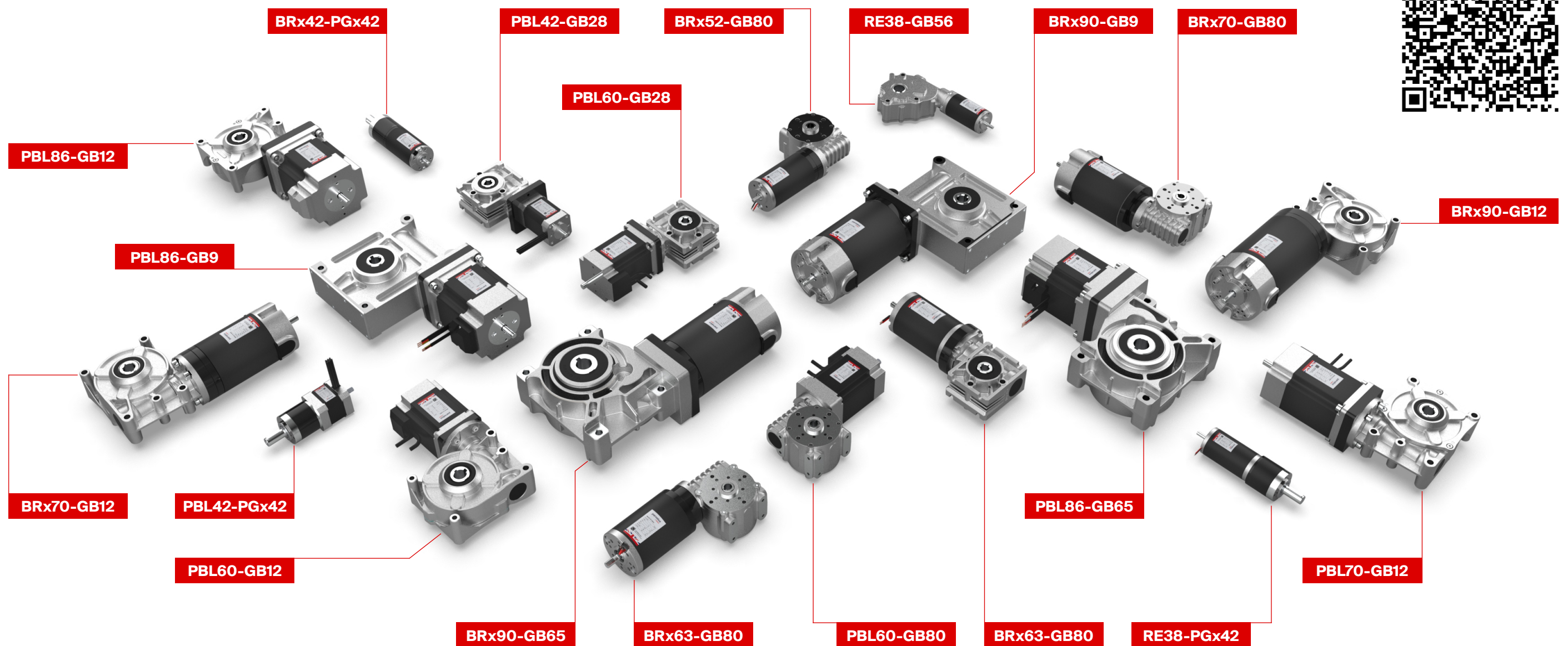
| Modular system |        |          |        |
|----------------|--------|----------|--------|
| BLDC           | Page # | PMDC     | Page # |
| PBL42-15       |        | RE38-25  |        |
| PBL42-35       |        | RE38-40  |        |
|                |        | BRx42-25 |        |
|                |        | BRx42-40 |        |

## Notes

# Modular combinations

With a wide range of motor and gearbox combinations, as well options for both motor voltage and gear ratio, an extensive output specification is available across the modular range.

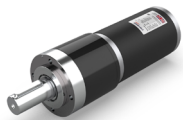
Explore the range displayed throughout this section or scan the QR code to find out more.



Combinations

PGx42

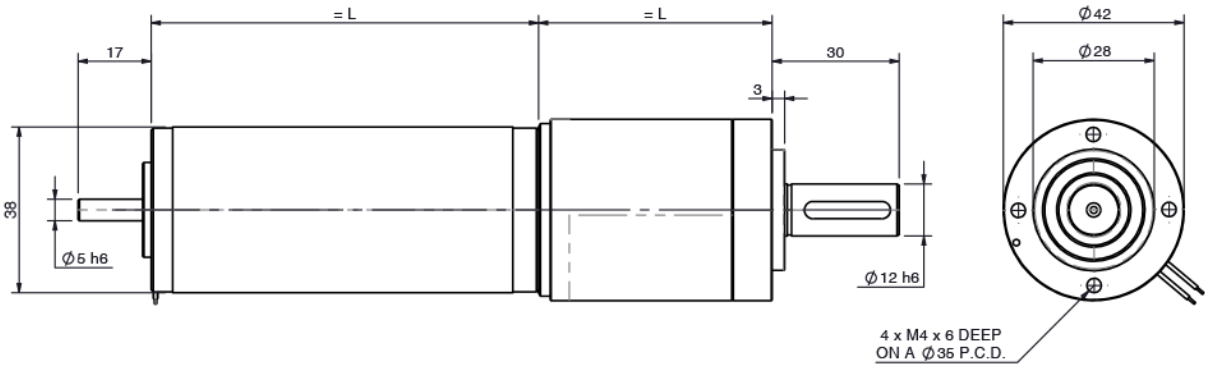
Available in 1 - 4 stages, and in 5 different gear ratios, the PGx42 planetary gearbox can be combined with the RE38 and BRx42 PMDC motors and the PBL42 BLDC motor.

|             |                                                                                     |                            |  |
|-------------|-------------------------------------------------------------------------------------|----------------------------|--|
| RE38-PGx42  |    | Max. speed <b>756 rpm</b>  |  |
|             |                                                                                     | Max. power <b>40 W</b>     |  |
|             |                                                                                     | Max. torque <b>16.9 Nm</b> |  |
| BRx42-PGx42 |   | Max. speed <b>698 rpm</b>  |  |
|             |                                                                                     | Max. power <b>18 W</b>     |  |
|             |                                                                                     | Max. torque <b>16.9 Nm</b> |  |
| PBL42-PGx42 |  | Max. speed <b>930 rpm</b>  |  |
|             |                                                                                     | Max. power <b>42 W</b>     |  |
|             |                                                                                     | Max. torque <b>16.9 Nm</b> |  |

RE38-PGx42 PMDC planetary geared motor

24 - 48 V // 24 - 40 W // 9 - 756 rpm // 0.3 - 16.9 Nm

all dimensions in mm



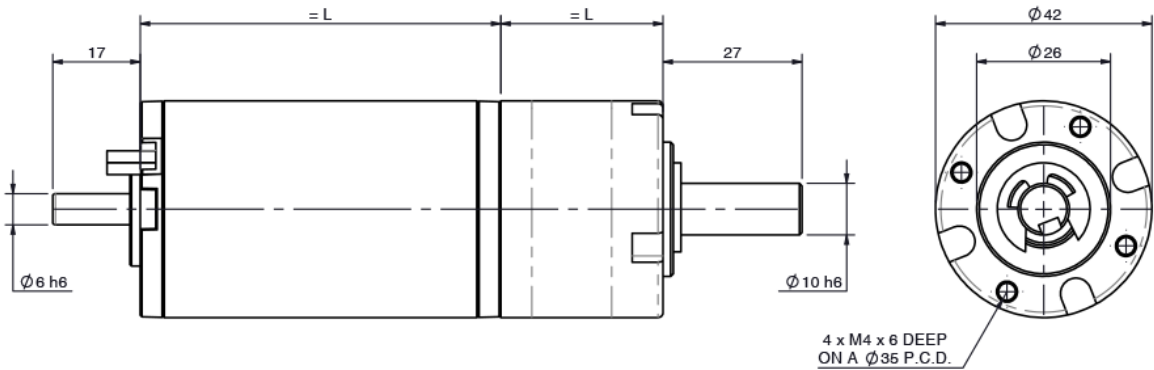
| Combination data                                        |             |                     |         |            |         |                 |         |         |         |         |         |
|---------------------------------------------------------|-------------|---------------------|---------|------------|---------|-----------------|---------|---------|---------|---------|---------|
| Motor                                                   |             | RE38-25             | RE38-25 | RE38-25    | RE38-25 | RE38-25         | RE38-40 | RE38-40 | RE38-40 | RE38-40 | RE38-40 |
| Voltage                                                 | V           | 24-48               | 24-48   | 24-48      | 24-48   | 24-48           | 24 - 48 | 24 - 48 | 24 - 48 | 24 - 48 | 24 - 48 |
| Nominal motor power                                     | W           | 24                  | 24      | 24         | 24      | 24              | 40      | 40      | 40      | 40      | 40      |
| Gearbox ratio                                           | :1          | 4.3                 | 19      | 66         | 150     | 353             | 4.3     | 19      | 66      | 150     | 353     |
| Nominal speed                                           | rpm         | 756                 | 171     | 49         | 22      | 9               | 744     | 168     | 48      | 21      | 9       |
| Continuous torque (S1)                                  | Nm          | 0.3                 | 1.1     | 3.3        | 6.7     | 11.3            | 0.5     | 1.8     | 5.7     | 11.3    | 11.3    |
| Intermittent torque (S2 - 15 mins)                      | Nm          | 0.4                 | 1.7     | 5.2        | 10.6    | 16.9            | 0.7     | 2.8     | 8.6     | 16.9    | 16.9    |
| Motor data                                              |             |                     |         |            |         |                 |         |         |         |         |         |
| Part number                                             |             | 857662              | 857663  | 857664     | 857665  |                 |         |         |         |         |         |
| Nominal power                                           | W           | 24                  | 24      | 40         | 40      |                 |         |         |         |         |         |
| Nominal voltage                                         | V           | 24                  | 48      | 24         | 48      |                 |         |         |         |         |         |
| Nominal speed                                           | rpm         | 3250                | 3250    | 3200       | 3200    |                 |         |         |         |         |         |
| Continuous torque (S1)                                  | Nm          | 0.07                | 0.07    | 0.12       | 0.12    |                 |         |         |         |         |         |
| Intermittent torque (S2 - 15 minutes)                   | Nm          | 0.11                | 0.11    | 0.18       | 0.18    |                 |         |         |         |         |         |
| Weight                                                  | Kg          | 0.30                | 0.30    | 0.40       | 0.40    |                 |         |         |         |         |         |
| Stack length                                            | mm          | 25                  | 25      | 40         | 40      |                 |         |         |         |         |         |
| Motor length                                            | mm          | 70                  | 70      | 90         | 90      |                 |         |         |         |         |         |
| Gearbox data                                            |             |                     |         |            |         |                 |         |         |         |         |         |
| Part number                                             |             | 891037              | 891038  | 891039     | 891040  | 891041          |         |         |         |         |         |
| Ratio                                                   | :1          | 4.3                 | 19      | 66         | 150     | 353             |         |         |         |         |         |
| Stage                                                   |             | 1                   | 2       | 3          | 4       | 4               |         |         |         |         |         |
| Max. continuous torque (S1) <sup>1</sup>                | Nm          | 2.3                 | 5.6     | 11.3       | 11.3    | 11.3            |         |         |         |         |         |
| Max. intermittent torque                                | Nm          | 3.4                 | 8.5     | 16.9       | 16.9    | 16.9            |         |         |         |         |         |
| Efficiency                                              | %           | 90                  | 81      | 72         | 64      | 64              |         |         |         |         |         |
| Max. axial load (dynamic)                               | N           | 150                 | 150     | 150        | 150     | 150             |         |         |         |         |         |
| Max. radial load, 12mm from flange                      | N           | 120                 | 240     | 360        | 360     | 360             |         |         |         |         |         |
| Weight                                                  | Kg          | 0.26                | 0.36    | 0.46       | 0.56    | 0.56            |         |         |         |         |         |
| Gearbox length                                          | mm          | 37.3                | 51.8    | 66.3       | 80.8    | 80.8            |         |         |         |         |         |
| Gear material                                           |             | Steel               | Steel   | Steel      | Steel   | Steel           |         |         |         |         |         |
| <sup>1</sup> S1 duty cycle based on 3000rpm input speed |             |                     |         |            |         |                 |         |         |         |         |         |
| Combination accessories                                 |             |                     |         |            |         |                 |         |         |         |         |         |
| Brake                                                   | Part number | Encoder             |         | Controller |         | Shaft extension |         |         |         |         |         |
| N/A                                                     | -           | Incremental 5-pin   |         | SC 50/15   |         | N/A             |         |         |         |         |         |
|                                                         |             | Incremental 10-pin  |         |            |         |                 |         |         |         |         |         |
|                                                         |             | Differential 10-pin |         |            |         |                 |         |         |         |         |         |
|                                                         |             | Mounting flange     |         |            |         |                 |         |         |         |         |         |

BRx42-PGx42

PMDC planetary geared motor

12 - 48 V // 12 - 18 W // 8 - 698 rpm // 0.1 - 16.9 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Motor                              |     | BRx42-25 | BRx42-25 | BRx42-25 | BRx42-25 | BRx42-25 | BRx42-40 | BRx42-40 | BRx42-40 | BRx42-40 |
| Voltage                            | V   | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  |
| Nominal motor power                | W   | 12       | 12       | 12       | 12       | 12       | 18       | 18       | 18       | 18       |
| Gearbox ratio                      | :1  | 4.3      | 19       | 66       | 150      | 353      | 4.3      | 19       | 66       | 150      |
| Nominal speed                      | rpm | 698      | 158      | 45       | 20       | 8        | 698      | 158      | 45       | 20       |
| Continuous torque (S1)             | Nm  | 0.1      | 0.6      | 1.8      | 3.6      | 8.6      | 0.2      | 0.9      | 2.7      | 5.5      |
| Intermittent torque (S2 - 15 mins) | Nm  | 0.2      | 0.9      | 2.9      | 5.8      | 13.6     | 0.3      | 1.4      | 4.3      | 8.6      |

| Motor data                            |     |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|
| Part number                           |     | 781076 | 781077 | 781079 | 781081 |
| Nominal power                         | W   | 12     | 12     | 18     | 18     |
| Nominal voltage                       | V   | 12     | 24     | 12     | 28     |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.038  | 0.038  | 0.057  | 0.057  |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.06   | 0.06   | 0.09   | 0.09   |
| Weight                                | Kg  | 0.39   | 0.39   | 0.52   | 0.52   |
| Stack length                          | mm  | 25     | 25     | 40     | 40     |
| Motor length                          | mm  | 70     | 70     | 85     | 85     |

| Gearbox data                             |    |        |        |        |        |
|------------------------------------------|----|--------|--------|--------|--------|
| Part number                              |    | 891037 | 891038 | 891039 | 891041 |
| Ratio                                    | :1 | 4.3    | 19     | 66     | 150    |
| Stage                                    |    | 1      | 2      | 3      | 4      |
| Max. continuous torque (S1) <sup>1</sup> | Nm | 2.3    | 5.6    | 11.3   | 11.3   |
| Max. intermittent torque                 | Nm | 3.4    | 8.5    | 16.9   | 16.9   |
| Efficiency                               | %  | 90     | 81     | 72     | 64     |
| Max. axial load (dynamic)                | N  | 150    | 150    | 150    | 150    |
| Max. radial load, 12mm from flange       | N  | 120    | 240    | 360    | 360    |
| Weight                                   | Kg | 0.26   | 0.36   | 0.46   | 0.56   |
| Gearbox length                           | mm | 37.3   | 51.8   | 66.3   | 80.8   |
| Gear material                            |    | Steel  | Steel  | Steel  | Steel  |

<sup>1</sup> S1 duty cycle based on 3000rpm input speed

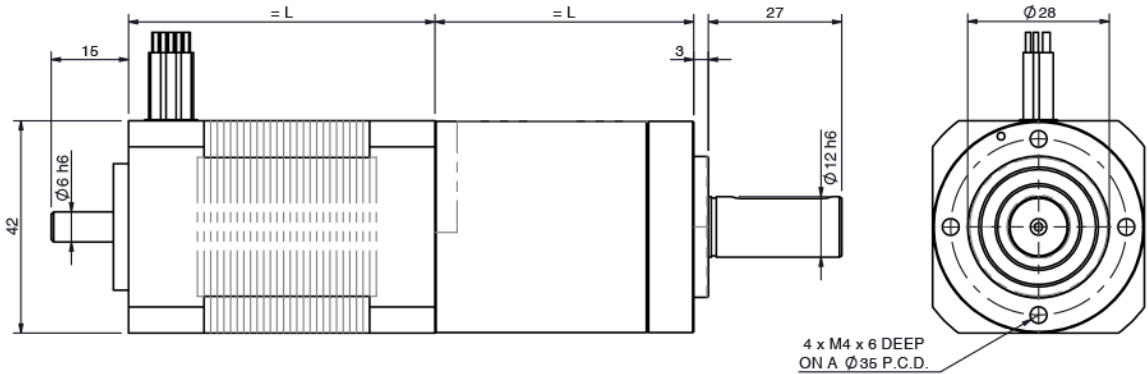
| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| N/A                     | -           | Incremental 5-pin   | 735912      | SC 50/15   | 738950      |
|                         |             | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |
|                         |             | Mounting flange     | 781275      |            |             |

PBL42-PGx42

PMDC planetary geared motor

24 - 48 V // 26 - 42 W // 11 - 930 rpm // 0.2 - 16.9 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Motor                              |     | PBL42-15 | PBL42-15 | PBL42-15 | PBL42-15 | PBL42-15 | PBL42-35 | PBL42-35 | PBL42-35 | PBL42-35 |
| Voltage                            | V   | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  | 12 - 24  |
| Nominal motor power                | W   | 26       | 26       | 26       | 26       | 26       | 42       | 42       | 42       | 42       |
| Gearbox ratio                      | :1  | 4.3      | 19       | 66       | 150      | 353      | 4.3      | 19       | 66       | 150      |
| Nominal speed                      | rpm | 930      | 211      | 61       | 27       | 11       | 930      | 211      | 61       | 27       |
| Continuous torque (S1)             | Nm  | 0.2      | 1.0      | 3.0      | 6.0      | 11.3     | 0.4      | 1.5      | 4.8      | 9.6      |
| Intermittent torque (S2 - 15 mins) | Nm  | 0.4      | 1.5      | 4.5      | 9.1      | 16.9     | 0.6      | 2.3      | 7.1      | 14.4     |

| Motor data                            |     |        |        |        | Connection details |             |               |
|---------------------------------------|-----|--------|--------|--------|--------------------|-------------|---------------|
| Part number                           |     | 776614 | 776615 | 776616 | 776617             | Lead colour | Lead gauge    |
| Nominal power                         | W   | 26     | 26     | 42     | 42                 | Red         | UL1569/26 AWG |
| Nominal voltage                       | V   | 24     | 48     | 24     | 48                 | Black       | UL1569/26 AWG |
| Nominal speed                         | rpm | 4000   | 4000   | 4000   | 4000               | Yellow      | UL1569/26 AWG |
| Continuous torque (S1)                | Nm  | 0.063  | 0.063  | 0.10   | 0.10               | Green       | UL1569/26 AWG |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.095  | 0.095  | 0.15   | 0.15               | Blue        | UL1569/26 AWG |
| Weight                                | Kg  | 0.30   | 0.30   | 0.45   | 0.45               | Yellow      | UL1569/20 AWG |
| Stack length                          | mm  | 15     | 15     | 35     | 35                 | Green       | UL1569/20 AWG |
| Motor length                          | mm  | 47     | 47     | 67     | 67                 | Blue        | UL1569/20 AWG |
|                                       |     |        |        |        |                    |             | Phase W       |

| Gearbox data                             |    |        |        |        |        |
|------------------------------------------|----|--------|--------|--------|--------|
| Part number                              |    | 891037 | 891038 | 891039 | 891041 |
| Ratio                                    | :1 | 4.3    | 19     | 66     | 150    |
| Stage                                    |    | 1      | 2      | 3      | 4      |
| Max. continuous torque (S1) <sup>1</sup> | Nm | 2.3    | 5.6    | 11.3   | 11.3   |
| Max. intermittent torque                 | Nm | 3.4    | 8.5    | 16.9   | 16.9   |
| Efficiency                               | %  | 90     | 81     | 72     | 64     |
| Max. axial load (dynamic)                | N  | 150    | 150    | 150    | 150    |
| Max. radial load, 12mm from flange       | N  | 120    | 240    | 360    | 360    |
| Weight                                   | Kg | 0.26   | 0.36   | 0.46   | 0.56   |
| Gearbox length                           | mm | 37.3   | 51.8   | 66.3   | 80.8   |
| Gear material                            |    | Steel  | Steel  | Steel  | Steel  |

<sup>1</sup> S1 duty cycle based on 3000rpm input speed

| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| N/A                     | -           | Incremental 5-pin   | 735912      | SC 50/15   | 738950      |
|                         |             | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |
|                         |             | Mounting flange     | 781275      |            |             |

# Combinations

# GB28

Supplied as standard with a hollow shaft, the GB28 right-angle gearbox is compatible with the PBL42 and PBL60 BLDC motors and the BRx63 PMDC motor. Add a shaft extension kit to the GB28 for further customisation.

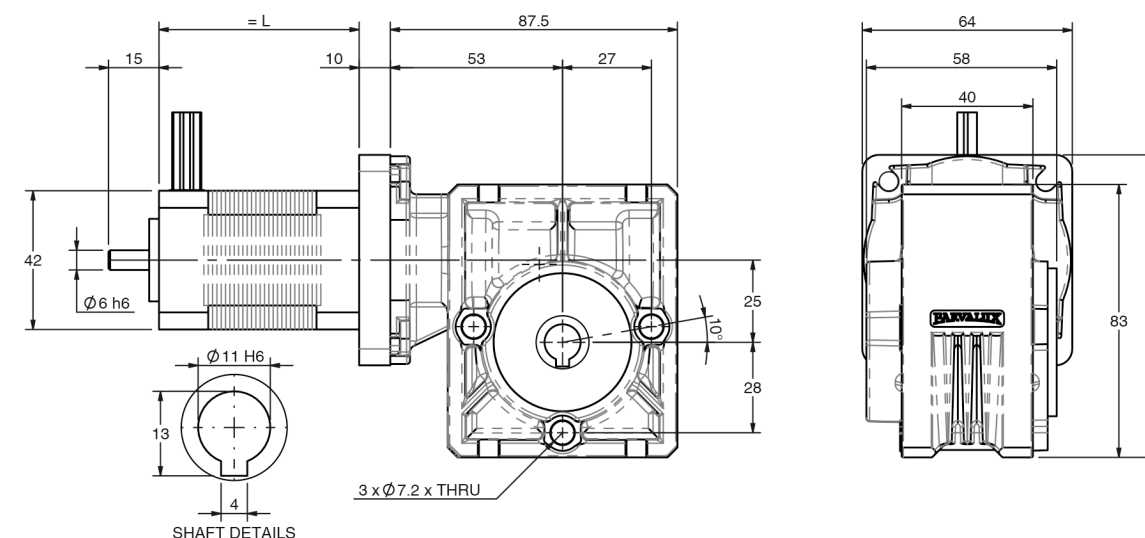
|            |                                                                                     |                           |  |
|------------|-------------------------------------------------------------------------------------|---------------------------|--|
| PBL42-GB28 |    | Max. speed <b>267 rpm</b> |  |
|            |                                                                                     | Max. power <b>42 W</b>    |  |
|            |                                                                                     | Max. torque <b>4.1 Nm</b> |  |
| BRx63-GB28 |   | Max. speed <b>200 rpm</b> |  |
|            |                                                                                     | Max. power <b>85 W</b>    |  |
|            |                                                                                     | Max. torque <b>8.0 Nm</b> |  |
| PBL60-GB28 |  | Max. speed <b>200 rpm</b> |  |
|            |                                                                                     | Max. power <b>157 W</b>   |  |
|            |                                                                                     | Max. torque <b>8.0 Nm</b> |  |

## PBL42-GB28

BLDC right-angle geared motor

24 - 48 V // 26 - 42 W // 67 - 267 rpm // 0.7 - 4.1 Nm

all dimensions in mm

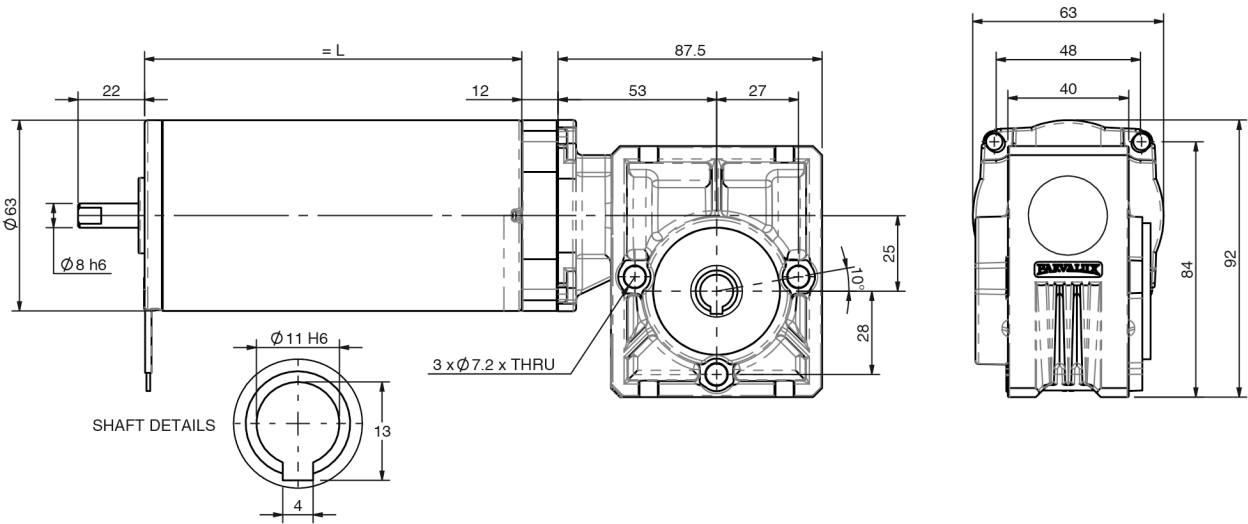


| Combination data                                        |             |                     |             |            |             |                    |               |
|---------------------------------------------------------|-------------|---------------------|-------------|------------|-------------|--------------------|---------------|
| Motor                                                   |             | PBL42-15            | PBL42-15    | PBL42-15   | PBL42-35    | PBL42-35           | PBL42-35      |
| Voltage                                                 | V           | 24 - 48             | 24 - 48     | 24 - 48    | 24 - 48     | 24 - 48            | 24 - 48       |
| Nominal motor power                                     | W           | 26                  | 26          | 26         | 42          | 42                 | 42            |
| Gearbox ratio                                           | :1          | 15                  | 30          | 60         | 15          | 30                 | 60            |
| Nominal speed                                           | rpm         | 267                 | 133         | 67         | 267         | 133                | 67            |
| Nominal torque <sup>1</sup>                             | Nm          | 0.7                 | 1.2         | 1.7        | 1.1         | 2.0                | 2.7           |
| Intermittent torque (S2 - 15 mins)                      | Nm          | 1.1                 | 1.9         | 2.6        | 1.7         | 2.9                | 4.1           |
| Motor data                                              |             |                     |             |            |             |                    |               |
| Part number                                             |             | 776614              | 776615      | 776616     | 776617      | Connection details |               |
| Nominal power                                           | W           | 26                  | 26          | 42         | 42          | Lead colour        | Lead gauge    |
| Nominal voltage                                         | V           | 24                  | 48          | 24         | 48          | Red                | UL1569/26 AWG |
| Nominal speed                                           | rpm         | 4000                | 4000        | 4000       | 4000        | Black              | UL1569/26 AWG |
| Continuous torque (S1)                                  | Nm          | 0.063               | 0.063       | 0.10       | 0.10        | Yellow             | UL1569/26 AWG |
| Intermittent torque (S2 - 15 minutes)                   | Nm          | 0.095               | 0.095       | 0.15       | 0.15        | Green              | UL1569/26 AWG |
| Weight                                                  | Kg          | 0.30                | 0.30        | 0.45       | 0.45        | Blue               | UL1569/26 AWG |
| Stack length                                            | mm          | 15                  | 15          | 35         | 35          | Yellow             | UL1569/20 AWG |
| Length                                                  | mm          | 47                  | 47          | 67         | 67          | Green              | UL1569/20 AWG |
|                                                         |             |                     |             |            |             | Blue               | UL1569/20 AWG |
| Gearbox data                                            |             |                     |             |            |             |                    |               |
| Part number                                             |             | 735904              | 735906      | 735907     | Function    |                    |               |
| Ratio                                                   | :1          | 15                  | 30          | 60         | Red         | VCC                |               |
| Max. continuous torque (S1) <sup>2</sup>                | Nm          | 5.0                 | 5.0         | 5.0        | Black       | GND                |               |
| Max. intermittent torque                                | Nm          | 8.0                 | 8.0         | 8.0        | Yellow      | Hall A             |               |
| Efficiency                                              | %           | 75                  | 65          | 45         | Green       | Hall B             |               |
| Max. axial load (dynamic)                               | N           | 300                 | 300         | 300        | Blue        | Hall C             |               |
| Max. radial load, 12mm from flange                      | N           | 400                 | 400         | 400        | Yellow      | Phase U            |               |
| Weight                                                  | Kg          | 0.83                | 0.83        | 0.83       | Green       | Phase V            |               |
| Gear material                                           |             | Bronze              | Bronze      | Bronze     | Blue        | Phase W            |               |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |             |                     |             |            |             |                    |               |
| Combination accessories                                 |             |                     |             |            |             |                    |               |
| Brake                                                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension    | Part number   |
| N/A                                                     | -           | Incremental 5-pin   | 735912      | SC 50/15   | 738950      | GB28 shaft kit     | 735908        |
|                                                         |             | Incremental 10-pin  | 919386      |            |             |                    |               |
|                                                         |             | Differential 10-pin | 919388      |            |             |                    |               |
|                                                         |             | Mounting flange     | 781275      |            |             |                    |               |

BRx63-GB28 PMDC right-angle geared motor

12 - 48 V // 47 - 85 W // 42 - 200 rpm // 2.0 - 8.0 Nm

all dimensions in mm



| Combination data                   |     |           |          |          |           |          |          |
|------------------------------------|-----|-----------|----------|----------|-----------|----------|----------|
| Motor                              |     | BRx63-25  | BRx63-25 | BRx63-25 | BRx63-55  | BRx63-55 | BRx63-55 |
| Voltage                            | V   | 12 - 48   | 12 - 48  | 12 - 48  | 12 - 48   | 12 - 48  | 12 - 48  |
| Nominal motor power                | W   | 47 - 57   | 47 - 57  | 47 - 57  | 79 - 85   | 79 - 85  | 79 - 85  |
| Gearbox ratio                      | :1  | 15        | 30       | 60       | 15        | 30       | 60       |
| Nominal speed                      | rpm | 167 - 200 | 83 - 100 | 42 - 50  | 187 - 200 | 93 - 100 | 47 - 50  |
| Nominal torque <sup>1</sup>        | Nm  | 2.0       | 3.5      | 4.9      | 3.0       | 5.0      | 5.0      |
| Intermittent torque (S2 - 15 mins) | Nm  | 3.4       | 5.9      | 8.0      | 5.1       | 8.0      | 8.0      |

| Motor data                            |     |        |        |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|--------|--------|
| Part number                           |     | 781083 | 781084 | 781085 | 781088 | 781089 | 781090 |
| Nominal power                         | W   | 47     | 57     | 57     | 79     | 85     | 85     |
| Nominal voltage                       | V   | 12     | 24     | 48     | 12     | 24     | 48     |
| Nominal speed                         | rpm | 2500   | 3000   | 3000   | 2800   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.18   | 0.18   | 0.18   | 0.27   | 0.27   | 0.27   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.30   | 0.30   | 0.30   | 0.45   | 0.45   | 0.45   |
| Weight                                | Kg  | 0.85   | 0.85   | 0.85   | 1.16   | 1.16   | 1.16   |
| Stack length                          | mm  | 25     | 25     | 25     | 55     | 55     | 55     |
| Length                                | mm  | 95     | 95     | 95     | 125    | 125    | 125    |

| Gearbox data                             |    |        |        |        |
|------------------------------------------|----|--------|--------|--------|
| Part number                              |    | 735904 | 735906 | 735907 |
| Ratio                                    | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 5.0    | 5.0    | 5.0    |
| Max. intermittent torque                 | Nm | 8.0    | 8.0    | 8.0    |
| Efficiency                               | %  | 75     | 65     | 45     |
| Max. axial load (dynamic)                | N  | 300    | 300    | 300    |
| Max. radial load, 12mm from flange       | N  | 400    | 400    | 400    |
| Weight                                   | Kg | 0.83   | 0.83   | 0.83   |
| Gear material                            |    | Bronze | Bronze | Bronze |

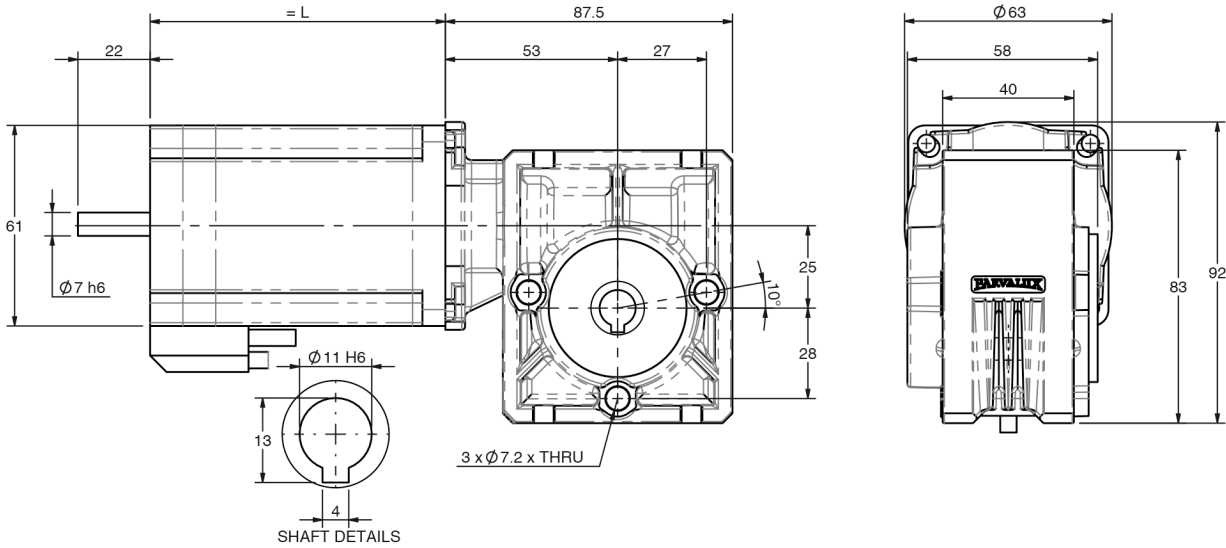
<sup>2</sup> S1 duty cycle based on 3000rpm input speed

| Combination accessories |             |                     |             |            |             |                 |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738950      | GB28 shaft kit  | 735908      |
| Mounting flange         | 781276      | Incremental 10-pin  | 919386      |            |             |                 |             |
|                         |             | Differential 10-pin | 919388      |            |             |                 |             |
|                         |             | Mounting flange     | 781275      |            |             |                 |             |

PBL60-GB28 BLDC right-angle geared motor

24 - 48 V // 104 - 157 W // 50 - 200 rpm // 3.7 - 8.0 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|
| Motor                              |     | PBL60-50 | PBL60-50 | PBL60-50 | PBL60-70 | PBL60-70 | PBL60-70 |
| Voltage                            | V   | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  |
| Nominal motor power                | W   | 104      | 104      | 104      | 157      | 157      | 157      |
| Gearbox ratio                      | :1  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | rpm | 200      | 100      | 50       | 200      | 100      | 50       |
| Nominal torque <sup>1</sup>        | Nm  | 3.7      | 5.0      | 5.0      | 5.0      | 5.0      | 5.0      |
| Intermittent torque (S2 - 15 mins) | Nm  | 6.5      | 8.0      | 8.0      | 8.0      | 8.0      | 8.0      |

| Motor data                            |     |        |        |        | Connection details |             |               |
|---------------------------------------|-----|--------|--------|--------|--------------------|-------------|---------------|
| Part number                           |     | 776618 | 776619 | 776620 | 776621             | Lead colour | Lead gauge    |
| Nominal power                         | W   | 104    | 104    | 157    | 157                | Red         | UL1569/26 AWG |
| Nominal voltage                       | V   | 24     | 48     | 24     | 48                 | Black       | UL1569/26 AWG |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 3000               | Blue        | UL1569/26 AWG |
| Continuous torque (S1)                | Nm  | 0.33   | 0.33   | 0.50   | 0.50               | Green       | UL1569/26 AWG |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.58   | 0.58   | 0.88   | 0.88               | White       | UL1569/26 AWG |
| Weight                                | Kg  | 1.20   | 1.20   | 1.60   | 1.60               | Red         | UL3266/18 AWG |
| Stack length                          | mm  | 50     | 50     | 70     | 70                 | Yellow      | UL3266/18 AWG |
| Length                                | mm  | 90     | 90     | 110    | 110                | Black       | UL3266/18 AWG |
|                                       |     |        |        |        |                    |             | Phase W       |

| Gearbox data                             |    |        |        |        |
|------------------------------------------|----|--------|--------|--------|
| Part number                              |    | 735904 | 735906 | 735907 |
| Ratio                                    | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 5.0    | 5.0    | 5.0    |
| Max. intermittent torque                 | Nm | 8.0    | 8.0    | 8.0    |
| Efficiency                               | %  | 75     | 65     | 45     |
| Max. axial load (dynamic)                | N  | 300    | 300    | 300    |
| Max. radial load, 12mm from flange       | N  | 400    | 400    | 400    |
| Weight                                   | Kg | 0.83   | 0.83   | 0.83   |
| Gear material                            |    | Bronze | Bronze | Bronze |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

| Combination accessories |             |                     |             |            |             |                 |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738950      | GB28 shaft kit  | 735908      |
| Mounting flange         | 781281      | Incremental 10-pin  | 919386      |            |             |                 |             |
|                         |             | Differential 10-pin | 919388      |            |             |                 |             |
|                         |             | Mounting flange     | 781275      |            |             |                 |             |

Combinations

# GB80

Supplied as standard with a hollow shaft, the GB80 right-angle gearbox is compatible with the BRx52, BRx63, and BRx70 PMDC motors and the PBL60 BLDC motor. Add a shaft extension kit to the GB80 for further customisation.

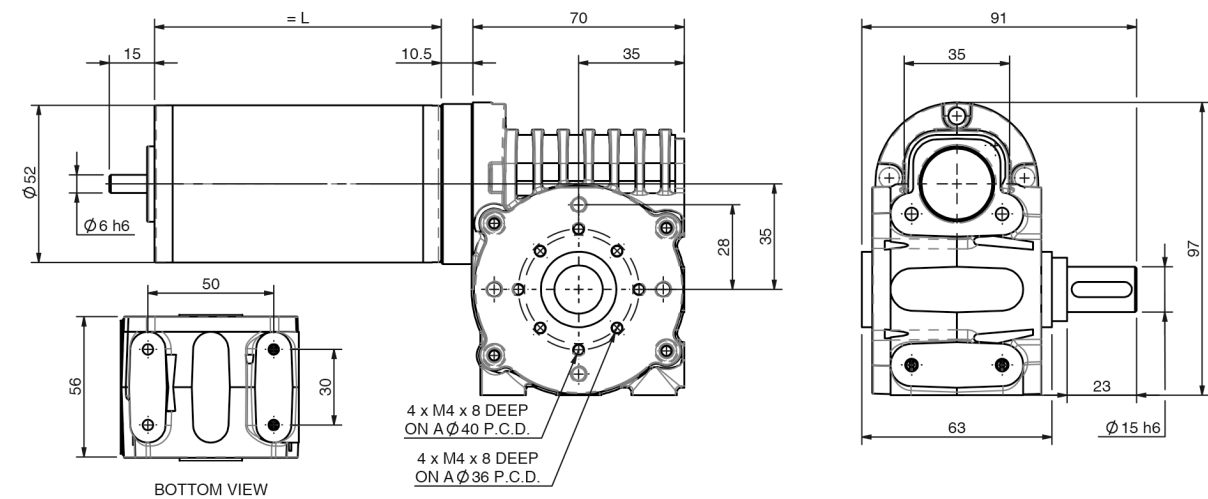
|            |                                                                                     |                            |  |
|------------|-------------------------------------------------------------------------------------|----------------------------|--|
| BRx52-GB80 |    | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>69 W</b>     |  |
|            |                                                                                     | Max. torque <b>10.0 Nm</b> |  |
| BRx63-GB80 |   | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>85 W</b>     |  |
|            |                                                                                     | Max. torque <b>10.0 Nm</b> |  |
| PBL60-GB80 |  | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>157 W</b>    |  |
|            |                                                                                     | Max. torque <b>13.0 Nm</b> |  |
| BRx70-GB80 |  | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>157 W</b>    |  |
|            |                                                                                     | Max. torque <b>13.0 Nm</b> |  |

## BRx52-GB80

PMDC right-angle geared motor

12 - 48 V // 28 - 69 W // 48 - 200 rpm // 1.0 - 10.0 Nm

all dimensions in mm



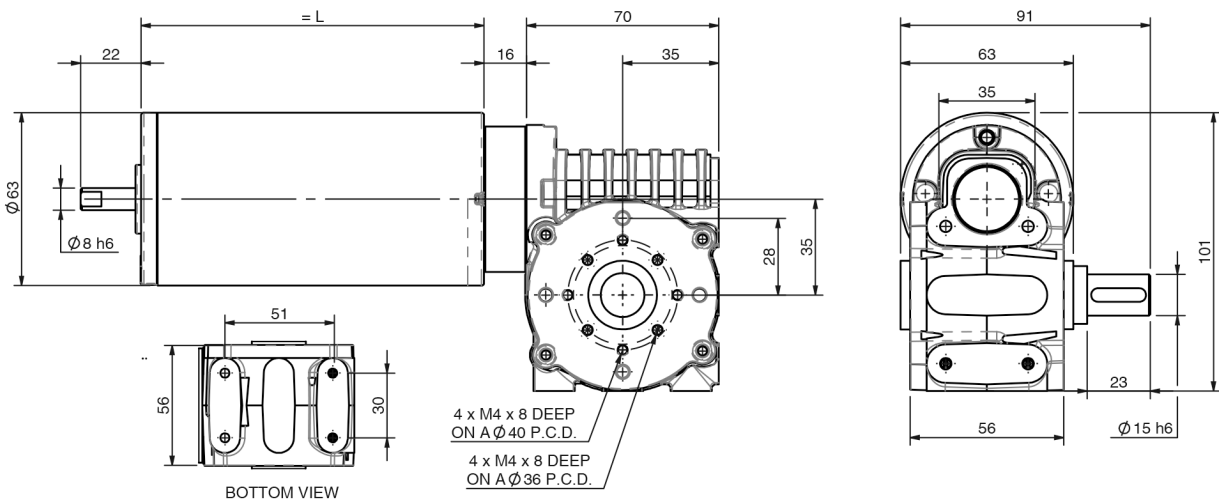
| Combination data                                        |             |                     |             |            |             |                 |             |
|---------------------------------------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|
| Motor                                                   |             | BRx52-30            | BRx52-30    | BRx52-30   | BRx52-58    | BRx52-58        | BRx52-58    |
| Voltage                                                 | V           | 12 - 48             | 12 - 48     | 12 - 48    | 12 - 48     | 12 - 48         | 12 - 48     |
| Nominal motor power                                     | W           | 28                  | 28          | 28         | 48 - 69     | 48 - 69         | 48 - 69     |
| Gearbox ratio                                           | :1          | 15                  | 30          | 60         | 15          | 30              | 60          |
| Nominal speed                                           | rpm         | 200                 | 100         | 50         | 190 - 200   | 95 - 100        | 48 - 50     |
| Nominal torque <sup>1</sup>                             | Nm          | 1.0                 | 1.9         | 2.9        | 1.8 - 2.5   | 3.4 - 4.6       | 5.2 - 6.0   |
| Intermittent torque (S2 - 15 mins)                      | Nm          | 1.7                 | 3.2         | 4.9        | 4.0         | 7.4             | 10.0        |
|                                                         |             |                     |             |            |             |                 |             |
| Motor data                                              |             |                     |             |            |             |                 |             |
| Part number                                             |             | 787108              | 787109      | 787110     | 787111      | 787113          | 787114      |
| Nominal power                                           | W           | 28                  | 28          | 28         | 48          | 69              | 69          |
| Nominal voltage                                         | V           | 12                  | 24          | 48         | 12          | 24              | 48          |
| Nominal speed                                           | rpm         | 3000                | 3000        | 3000       | 2850        | 3000            | 3000        |
| Continuous torque (S1)                                  | Nm          | 0.09                | 0.09        | 0.09       | 0.16        | 0.22            | 0.22        |
| Intermittent torque (S2 - 15 minutes)                   | Nm          | 0.15                | 0.15        | 0.15       | 0.35        | 0.35            | 0.35        |
| Weight                                                  | Kg          | 0.85                | 0.85        | 0.85       | 1.16        | 1.16            | 1.16        |
| Stack length                                            | mm          | 30                  | 30          | 30         | 58          | 58              | 58          |
| Length                                                  | mm          | 95                  | 95          | 95         | 125         | 125             | 125         |
|                                                         |             |                     |             |            |             |                 |             |
| Gearbox data                                            |             |                     |             |            |             |                 |             |
| Part number                                             |             | 888018              | 888020      | 888021     |             |                 |             |
| Ratio                                                   | :1          | 15                  | 30          | 60         |             |                 |             |
| Max. continuous torque (S1) <sup>2</sup>                | Nm          | 8.0                 | 8.0         | 6.0        |             |                 |             |
| Max. intermittent torque                                | Nm          | 13.0                | 13.0        | 10.0       |             |                 |             |
| Efficiency                                              | %           | 77                  | 70          | 54         |             |                 |             |
| Max. axial load (dynamic)                               | N           | 300                 | 300         | 300        |             |                 |             |
| Max. radial load, 12mm from flange                      | N           | 350                 | 350         | 350        |             |                 |             |
| Weight                                                  | Kg          | 0.7                 | 0.7         | 0.7        |             |                 |             |
| Gear material                                           |             | Composite           | Composite   | Composite  |             |                 |             |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |             |                     |             |            |             |                 |             |
|                                                         |             |                     |             |            |             |                 |             |
| Combination accessories                                 |             |                     |             |            |             |                 |             |
| Brake                                                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |
| N/A                                                     | -           | Incremental 5-pin   | 735912      | SC 50/15   | 738590      | GB80 shaft kit  | 860809      |
|                                                         |             | Incremental 10-pin  | 919386      |            |             |                 |             |
|                                                         |             | Differential 10-pin | 919388      |            |             |                 |             |
|                                                         |             | Mounting flange     | 837660      |            |             |                 |             |

BRx63-GB80

PMDC right-angle geared motor

12 - 48 V // 47 - 85 W // 42 - 200 rpm // 2.1 - 10.0 Nm

all dimensions in mm



| Combination data                   |     |           |          |          |           |          |          |
|------------------------------------|-----|-----------|----------|----------|-----------|----------|----------|
| Motor                              |     | BRx63-25  | BRx63-25 | BRx63-25 | BRx63-55  | BRx63-55 | BRx63-55 |
| Voltage                            | V   | 12 - 48   | 12 - 48  | 12 - 48  | 12 - 48   | 12 - 48  | 12 - 48  |
| Nominal motor power                | W   | 47 - 57   | 47 - 57  | 47 - 57  | 79 - 85   | 79 - 85  | 79 - 85  |
| Gearbox ratio                      | :1  | 15        | 30       | 60       | 15        | 30       | 60       |
| Nominal speed                      | rpm | 167 - 200 | 83 - 100 | 42 - 50  | 187 - 200 | 93 - 100 | 47 - 50  |
| Nominal torque <sup>1</sup>        | Nm  | 2.1       | 3.8      | 5.8      | 3.1       | 5.7      | 6.0      |
| Intermittent torque (S2 - 15 mins) | Nm  | 3.5       | 6.3      | 9.7      | 5.2       | 9.5      | 10.0     |

| Motor data                            |     |        |        |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|--------|--------|
| Part number                           |     | 781083 | 781084 | 781085 | 781088 | 781089 | 781090 |
| Nominal power                         | W   | 47     | 57     | 57     | 79     | 85     | 85     |
| Nominal voltage                       | V   | 12     | 24     | 48     | 12     | 24     | 48     |
| Nominal speed                         | rpm | 2500   | 3000   | 3000   | 2800   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.18   | 0.18   | 0.18   | 0.27   | 0.27   | 0.27   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.30   | 0.30   | 0.30   | 0.45   | 0.45   | 0.45   |
| Weight                                | Kg  | 0.85   | 0.85   | 0.85   | 1.16   | 1.16   | 1.16   |
| Stack length                          | mm  | 25     | 25     | 25     | 55     | 55     | 55     |
| Length                                | mm  | 95     | 95     | 95     | 125    | 125    | 125    |

| Gearbox data                             |    |           |           |           |
|------------------------------------------|----|-----------|-----------|-----------|
| Part number                              |    | 888018    | 888020    | 888021    |
| Ratio                                    | :1 | 15        | 30        | 60        |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 8.0       | 8.0       | 6.0       |
| Max. intermittent torque                 | Nm | 13.0      | 13.0      | 10.0      |
| Efficiency                               | %  | 77        | 70        | 54        |
| Max. axial load (dynamic)                | N  | 300       | 300       | 300       |
| Max. radial load, 12mm from flange       | N  | 350       | 350       | 350       |
| Weight                                   | Kg | 0.7       | 0.7       | 0.7       |
| Gear material                            |    | Composite | Composite | Composite |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

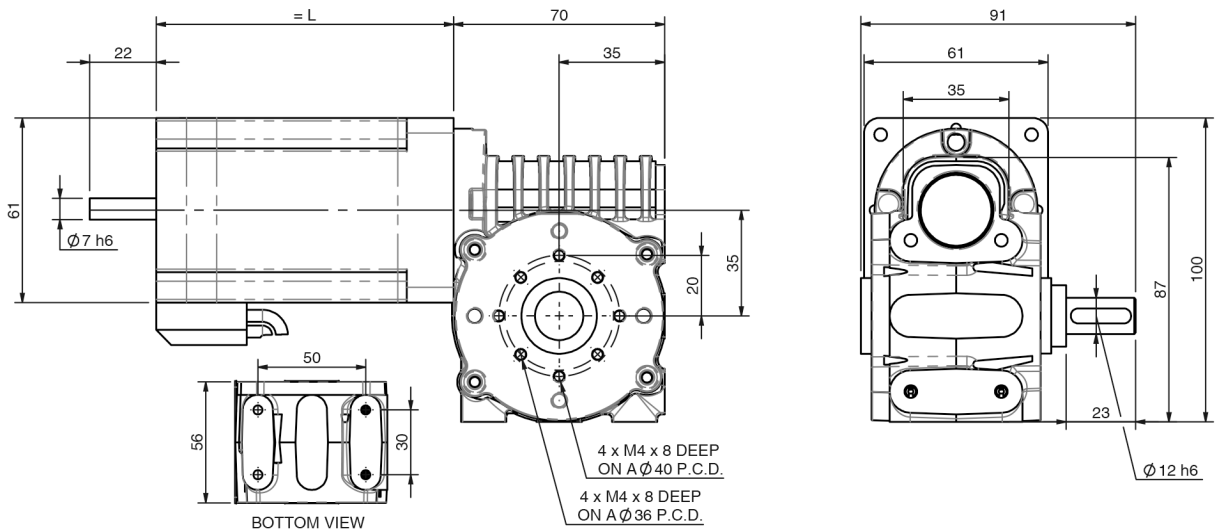
| Combination accessories |             |                     |             |            |             |                 |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      | GB80 shaft kit  | 860809      |
| Mounting flange         | 781276      | Incremental 10-pin  | 919386      |            |             |                 |             |
|                         |             | Differential 10-pin | 919388      |            |             |                 |             |
|                         |             | Mounting flange     | 781276      |            |             |                 |             |

PBL60-GB80

BLDC right-angle geared motor

24 - 48 V // 104 - 157 W // 50 - 200 rpm // 3.8 - 13.0 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|
| Motor                              |     | PBL60-50 | PBL60-50 | PBL60-50 | PBL60-70 | PBL60-70 | PBL60-70 |
| Voltage                            | V   | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  | 24 - 48  |
| Nominal motor power                | W   | 104      | 104      | 104      | 157      | 157      | 157      |
| Gearbox ratio                      | :1  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | rpm | 200      | 100      | 50       | 200      | 100      | 50       |
| Nominal torque <sup>1</sup>        | Nm  | 3.8      | 6.9      | 6.0      | 5.8      | 8.0      | 6.0      |
| Intermittent torque (S2 - 15 mins) | Nm  | 6.7      | 12.2     | 10.0     | 10.2     | 13.0     | 10.0     |

| Motor data                            |     |        |        |        | Connection details |             |               |
|---------------------------------------|-----|--------|--------|--------|--------------------|-------------|---------------|
| Part number                           |     | 776618 | 776619 | 776620 | 776621             | Lead colour | Lead gauge    |
| Nominal power                         | W   | 104    | 104    | 157    | 157                | Red         | UL1569/26 AWG |
| Nominal voltage                       | V   | 24     | 48     | 24     | 48                 | Black       | UL1569/26 AWG |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 3000               | Blue        | UL1569/26 AWG |
| Continuous torque (S1)                | Nm  | 0.33   | 0.33   | 0.50   | 0.50               | Green       | UL1569/26 AWG |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.58   | 0.58   | 0.88   | 0.88               | White       | UL1569/26 AWG |
| Weight                                | Kg  | 1.20   | 1.20   | 1.60   | 1.60               | Red         | UL3266/18 AWG |
| Stack length                          | mm  | 50     | 50     | 70     | 70                 | Yellow      | UL3266/18 AWG |
| Length                                | mm  | 90     | 90     | 110    | 110                | Black       | UL3266/18 AWG |

| Gearbox data                             |    |           |           |           | Function |  |  |
|------------------------------------------|----|-----------|-----------|-----------|----------|--|--|
| Part number                              |    | 888018    | 888020    | 888021    |          |  |  |
| Ratio                                    | :1 | 15        | 30        | 60        |          |  |  |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 8.0       | 8.0       | 6.0       |          |  |  |
| Max. intermittent torque                 | Nm | 13.0      | 13.0      | 10.0      |          |  |  |
| Efficiency                               | %  | 77        | 70        | 54        |          |  |  |
| Max. axial load (dynamic)                | N  | 300       | 300       | 300       |          |  |  |
| Max. radial load, 12mm from flange       | N  | 350       | 350       | 350       |          |  |  |
| Weight                                   | Kg | 0.7       | 0.7       | 0.7       |          |  |  |
| Gear material                            |    | Composite | Composite | Composite |          |  |  |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

| Combination accessories |             |                     |             |            |             |                 |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      | GB80 shaft kit  | 860809      |
| Mounting flange         | 781281      | Incremental 10-pin  | 919386      |            |             |                 |             |
|                         |             | Differential 10-pin | 919388      |            |             |                 |             |

PMDC right-angle geared motor

all dimensions in mm



| Combination data                   |            |          |          |          |          |          |          |
|------------------------------------|------------|----------|----------|----------|----------|----------|----------|
| Motor                              |            | BRx70-40 | BRx70-40 | BRx70-40 | BRx70-60 | BRx70-60 | BRx70-60 |
| Voltage                            | <b>V</b>   | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  |
| Nominal motor power                | <b>W</b>   | 79       | 79       | 79       | 157      | 157      | 157      |
| Gearbox ratio                      | <b>:1</b>  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | <b>rpm</b> | 200      | 100      | 50       | 200      | 100      | 50       |
| Nominal torque <sup>1</sup>        | <b>Nm</b>  | 2.9      | 5.3      | 6.0      | 5.8      | 8.0      | 6.0      |
| Intermittent torque (S2 - 15 mins) | <b>Nm</b>  | 4.9      | 8.8      | 10.0     | 10.2     | 13.0     | 10.0     |

| Motor data                            |     |        |        |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|--------|--------|
| Part number                           |     | 781092 | 781093 | 781094 | 781095 | 781096 | 781097 |
| Nominal power                         | W   | 79     | 79     | 79     | 157    | 157    | 157    |
| Nominal voltage                       | V   | 12     | 24     | 48     | 12     | 24     | 48     |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 3000   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.25   | 0.25   | 0.25   | 0.50   | 0.50   | 0.50   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.42   | 0.42   | 0.42   | 0.88   | 0.88   | 0.88   |
| Weight                                | Kg  | 1.85   | 1.85   | 1.85   | 2.25   | 2.25   | 2.25   |
| Stack length                          | mm  | 40     | 40     | 40     | 60     | 60     | 60     |
| Length                                | mm  | 125    | 125    | 125    | 146    | 146    | 146    |

| Gearbox data                             |    |           |           |           |
|------------------------------------------|----|-----------|-----------|-----------|
| Part number                              |    | 888018    | 888020    | 888021    |
| Ratio                                    | :1 | 15        | 30        | 60        |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 8.0       | 8.0       | 6.0       |
| Max. intermittent torque                 | Nm | 13.0      | 13.0      | 10.0      |
| Efficiency                               | %  | 77        | 70        | 54        |
| Max. axial load (dynamic)                | N  | 300       | 300       | 300       |
| Max. radial load, 12mm from flange       | N  | 350       | 350       | 350       |
| Weight                                   | Kg | 0.7       | 0.7       | 0.7       |
| Gear material                            |    | Composite | Composite | Composite |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

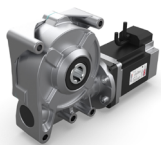
| Combination accessories |        |                     |        |             |        |                 |        |
|-------------------------|--------|---------------------|--------|-------------|--------|-----------------|--------|
| Brake                   |        | Encoder             |        | Controller  |        | Shaft extension |        |
| Part number             |        | Part Number         |        | Part Number |        | Part number     |        |
| 1.5 Nm brake            | 735914 | Incremental 5-pin   | 735912 | SC 50/15    | 738590 | GB80 shaft kit  | 860809 |
| Mounting flange         | 781277 | Differential 10-pin | 919386 |             |        |                 |        |
|                         |        | Differential 10-pin | 919388 |             |        |                 |        |

## This image shows a full page of blank handwriting practice paper. It features evenly spaced horizontal red lines across the entire surface, providing a guide for letter height and placement. There are no margins, text, or other markings on the page.

# Combinations

# GB12

Supplied as standard with a hollow shaft, the GB12 right-angle gearbox is compatible with the BRx70 and BRx90 PMDC motors and the PBL60, PBL70, and PBL86 BLDC motor. Add a shaft extension kit to the GB12 for further customisation.

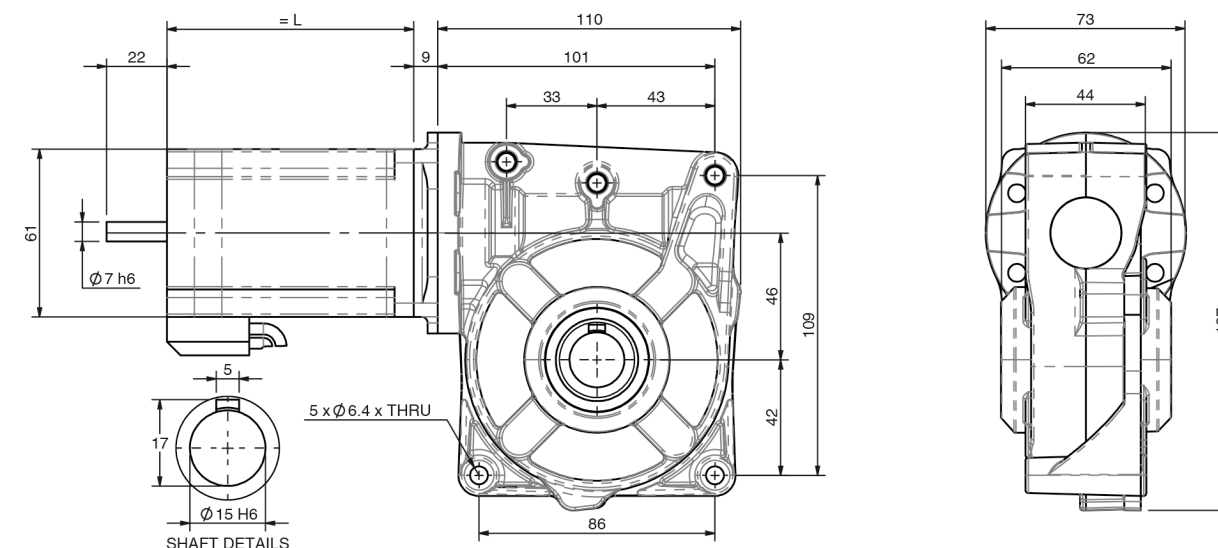
|            |                                                                                     |                            |  |
|------------|-------------------------------------------------------------------------------------|----------------------------|--|
| PBL60-GB12 |    | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>157 W</b>    |  |
|            |                                                                                     | Max. torque <b>26.4 Nm</b> |  |
| BRx70-GB12 |   | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>157 W</b>    |  |
|            |                                                                                     | Max. torque <b>26.4 Nm</b> |  |
| PBL70-GB12 |  | Max. speed <b>300 rpm</b>  |  |
|            |                                                                                     | Max. power <b>415 W</b>    |  |
|            |                                                                                     | Max. torque <b>46.2 Nm</b> |  |
| BRx90-GB12 |  | Max. speed <b>200 rpm</b>  |  |
|            |                                                                                     | Max. power <b>283 W</b>    |  |
|            |                                                                                     | Max. torque <b>45.0 Nm</b> |  |
| PBL86-GB12 |  | Max. speed <b>267 rpm</b>  |  |
|            |                                                                                     | Max. power <b>586 W</b>    |  |
|            |                                                                                     | Max. torque <b>48.0 Nm</b> |  |

## PBL60-GB12

BLDC right-angle geared motor

24 - 48 V // 104 - 157 W // 50 - 200 rpm // 3.7 - 26.4 Nm

all dimensions in mm



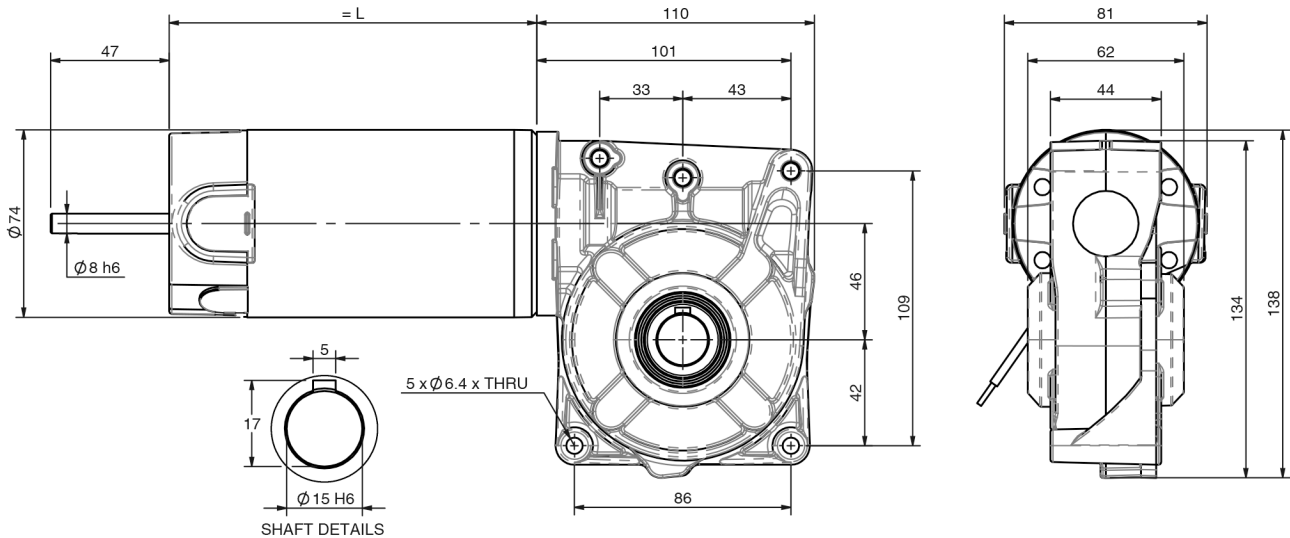
| Combination data                                        |             |                     |             |            |             |                    |               |
|---------------------------------------------------------|-------------|---------------------|-------------|------------|-------------|--------------------|---------------|
| Motor                                                   |             | PBL60-50            | PBL60-50    | PBL60-50   | PBL60-70    | PBL60-70           | PBL60-70      |
| Voltage                                                 | V           | 24 - 48             | 24 - 48     | 24 - 48    | 24 - 48     | 24 - 48            | 24 - 48       |
| Nominal motor power                                     | W           | 104                 | 104         | 104        | 157         | 157                | 157           |
| Gearbox ratio                                           | :1          | 15                  | 30          | 60         | 15          | 30                 | 60            |
| Nominal speed                                           | rpm         | 200                 | 100         | 50         | 200         | 100                | 50            |
| Nominal torque <sup>1</sup>                             | Nm          | 3.7                 | 6.4         | 9.9        | 5.6         | 9.8                | 15.0          |
| Intermittent torque (S2 - 15 mins)                      | Nm          | 6.5                 | 11.3        | 17.4       | 9.9         | 17.2               | 26.4          |
| Motor data                                              |             |                     |             |            |             |                    |               |
| Part number                                             |             | 776618              | 776619      | 776620     | 776621      | Connection details |               |
| Nominal power                                           | W           | 104                 | 104         | 157        | 157         | Lead colour        | Lead gauge    |
| Nominal voltage                                         | V           | 24                  | 48          | 24         | 48          | Red                | UL1569/26 AWG |
| Nominal speed                                           | rpm         | 3000                | 3000        | 3000       | 3000        | Black              | UL1569/26 AWG |
| Continuous torque (S1)                                  | Nm          | 0.33                | 0.33        | 0.50       | 0.50        | Blue               | UL1569/26 AWG |
| Intermittent torque (S2 - 15 minutes)                   | Nm          | 0.58                | 0.58        | 0.88       | 0.88        | Green              | UL1569/26 AWG |
| Weight                                                  | Kg          | 1.20                | 1.20        | 1.60       | 1.60        | White              | UL1569/26 AWG |
| Stack length                                            | mm          | 50                  | 50          | 70         | 70          | Yellow             | UL3266/18 AWG |
| Length                                                  | mm          | 90                  | 90          | 110        | 110         | Black              | UL3266/18 AWG |
| Gearbox data                                            |             |                     |             |            |             |                    |               |
| Part number                                             |             | 735900              | 735901      | 735902     | Function    |                    |               |
| Ratio                                                   | :1          | 15                  | 30          | 60         | Red         | VCC                |               |
| Max. continuous torque (S1) <sup>2</sup>                | Nm          | 30.0                | 30.0        | 30.0       | Black       | GND                |               |
| Max. intermittent torque                                | Nm          | 48.0                | 48.0        | 48.0       | Blue        | Hall A             |               |
| Efficiency                                              | %           | 75                  | 65          | 50         | Green       | Hall B             |               |
| Max. axial load (dynamic)                               | N           | 600                 | 600         | 600        | White       | Hall C             |               |
| Max. radial load, 12mm from flange                      | N           | 800                 | 800         | 800        | Red         | Phase U            |               |
| Weight                                                  | Kg          | 1.5                 | 1.5         | 1.5        | Yellow      | Phase V            |               |
| Gear material                                           |             | Bronze              | Bronze      | Bronze     | Black       | Phase W            |               |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |             |                     |             |            |             |                    |               |
| Combination accessories                                 |             |                     |             |            |             |                    |               |
| Brake                                                   | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension    | Part number   |
| 1.5 Nm brake                                            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      | GB12 shaft kit     | 735903        |
| Mounting flange                                         | 781281      | Incremental 10-pin  | 919386      |            |             |                    |               |
|                                                         |             | Differential 10-pin | 919388      |            |             |                    |               |

BRx70-GB12

PMDC right-angle geared motor

12 - 48 V // 79 - 157 W // 50 - 200 rpm // 2.8 - 26.4 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|
| Motor                              |     | BRx70-40 | BRx70-40 | BRx70-40 | BRx70-60 | BRx70-60 | BRx70-60 |
| Voltage                            | V   | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  | 12 - 48  |
| Nominal motor power                | W   | 79       | 79       | 79       | 157      | 157      | 157      |
| Gearbox ratio                      | :1  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | rpm | 200      | 100      | 50       | 200      | 100      | 50       |
| Nominal torque <sup>1</sup>        | Nm  | 2.8      | 4.9      | 7.5      | 5.6      | 9.8      | 15.0     |
| Intermittent torque (S2 - 15 mins) | Nm  | 4.7      | 8.2      | 12.6     | 9.9      | 17.2     | 26.4     |

| Motor data                            |     |        |        |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|--------|--------|
| Part number                           |     | 781092 | 781093 | 781094 | 781095 | 781096 | 781097 |
| Nominal power                         | W   | 79     | 79     | 79     | 157    | 157    | 157    |
| Nominal voltage                       | V   | 12     | 24     | 48     | 12     | 24     | 48     |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 3000   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.25   | 0.25   | 0.25   | 0.50   | 0.50   | 0.50   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 0.42   | 0.42   | 0.42   | 0.88   | 0.88   | 0.88   |
| Weight                                | Kg  | 1.85   | 1.85   | 1.85   | 2.25   | 2.25   | 2.25   |
| Stack length                          | mm  | 40     | 40     | 40     | 60     | 60     | 60     |
| Length                                | mm  | 125    | 125    | 125    | 146    | 146    | 146    |

| Gearbox data                             |    |        |        |        |
|------------------------------------------|----|--------|--------|--------|
| Part number                              |    | 735900 | 735901 | 735902 |
| Ratio                                    | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 30.0   | 30.0   | 30.0   |
| Max. intermittent torque                 | Nm | 48.0   | 48.0   | 48.0   |
| Efficiency                               | %  | 75     | 65     | 50     |
| Max. axial load (dynamic)                | N  | 600    | 600    | 600    |
| Max. radial load, 12mm from flange       | N  | 800    | 800    | 800    |
| Weight                                   | Kg | 1.5    | 1.5    | 1.5    |
| Gear material                            |    | Bronze | Bronze | Bronze |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

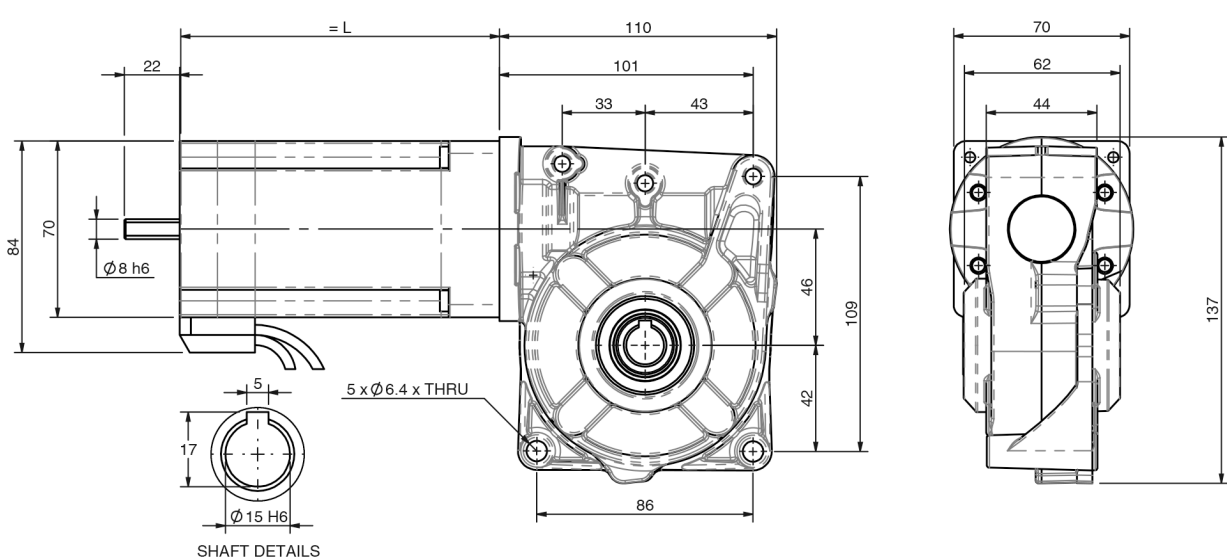
| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      |
| Mounting flange         | 781277      | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |

PBL70-GB12

BLDC right-angle geared motor

48 V // 363 - 415 W // 75 - 300 rpm // 8.7 - 46.2 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|
| Motor                              |     | PBL70-70 | PBL70-70 | PBL70-70 | PBL70-80 | PBL70-80 | PBL70-80 |
| Voltage                            | V   | 48       | 48       | 48       | 48       | 48       | 48       |
| Nominal motor power                | W   | 363      | 363      | 363      | 415      | 415      | 415      |
| Gearbox ratio                      | :1  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | rpm | 300      | 150      | 75       | 300      | 150      | 75       |
| Nominal torque <sup>1</sup>        | Nm  | 8.7      | 15.0     | 23.1     | 9.9      | 17.2     | 26.4     |
| Intermittent torque (S2 - 15 mins) | Nm  | 15.2     | 26.3     | 40.5     | 17.3     | 30.0     | 46.2     |

| Motor data                            |     |        |        | Connection details |               |          |
|---------------------------------------|-----|--------|--------|--------------------|---------------|----------|
| Part number                           |     | 776622 | 776623 | Lead colour        | Lead gauge    | Function |
| Nominal power                         | W   | 363    | 415    | Red                | UL1569/26 AWG | VCC      |
| Nominal voltage                       | V   | 48     | 48     | Black              | UL1569/26 AWG | GND      |
| Nominal speed                         | rpm | 4500   | 4500   | Blue               | UL1569/26 AWG | Hall A   |
| Continuous torque (S1)                | Nm  | 0.77   | 0.88   | Green              | UL1569/26 AWG | Hall B   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 1.35   | 1.54   | White              | UL1569/26 AWG | Hall C   |
| Weight                                | Kg  | 2.20   | 2.60   | Red                | UL3266/16 AWG | Phase U  |
| Stack length                          | mm  | 40     | 60     | Yellow             | UL3266/16 AWG | Phase V  |
| Length                                | mm  | 114    | 124    | Black              | UL3266/16 AWG | Phase W  |

| Gearbox data                             |    |        |        |        |
|------------------------------------------|----|--------|--------|--------|
| Part number                              |    | 735900 | 735901 | 735902 |
| Ratio                                    | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup> | Nm | 30.0   | 30.0   | 30.0   |
| Max. intermittent torque                 | Nm | 48.0   | 48.0   | 48.0   |
| Efficiency                               | %  | 75     | 65     | 50     |
| Max. axial load (dynamic)                | N  | 600    | 600    | 600    |
| Max. radial load, 12mm from flange       | N  | 800    | 800    | 800    |
| Weight                                   | Kg | 1.5    | 1.5    | 1.5    |
| Gear material                            |    | Bronze | Bronze | Bronze |

<sup>2</sup> S1 duty cycle based on 3000rpm input speed

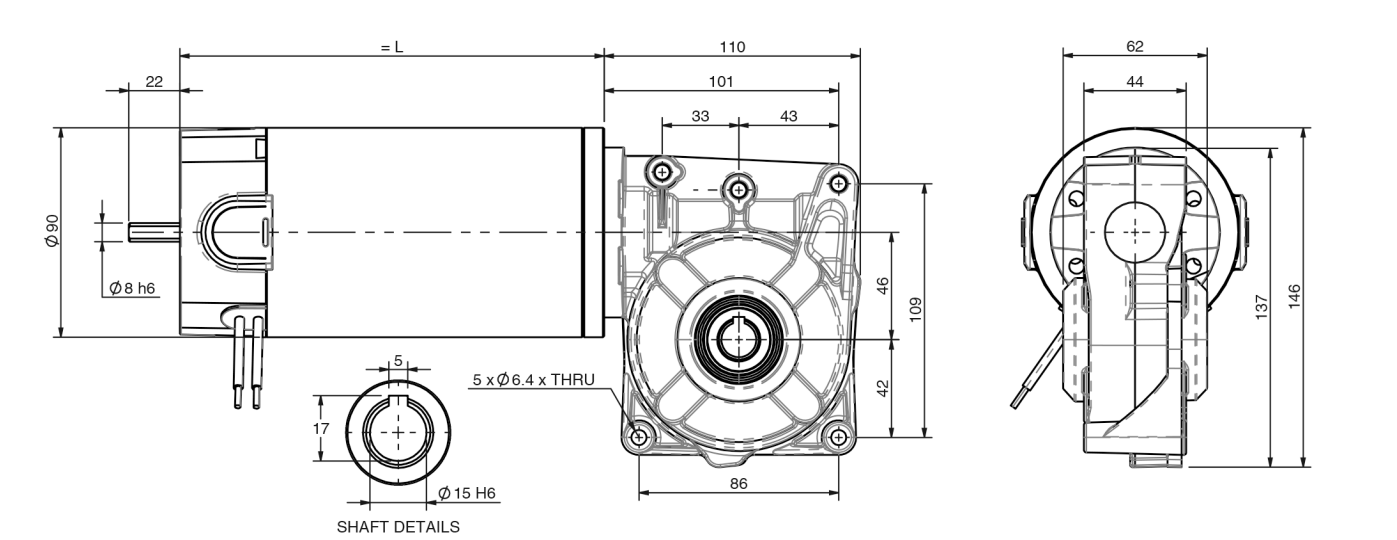
| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      |
| Mounting flange         | 781281      | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |

BRx90-GB12

PMDC right-angle geared motor

12 - 48 V // 157 - 283 W // 42 - 200 rpm // 5.6 - 45.0 Nm

all dimensions in mm



| Combination data                   |     |           |            |             |           |           |           |
|------------------------------------|-----|-----------|------------|-------------|-----------|-----------|-----------|
| Motor                              |     | BRx90-50  | BRx90-50   | BRx90-50    | BRx90-75  | BRx90-75  | BRx90-75  |
| Voltage                            | V   | 12 - 48   | 12 - 48    | 12 - 48     | 12 - 48   | 12 - 48   | 12 - 48   |
| Nominal motor power                | W   | 157 - 210 | 157 - 210  | 157 - 210   | 236 - 283 | 236 - 283 | 236 - 283 |
| Gearbox ratio                      | :1  | 15        | 30         | 60          | 15        | 30        | 60        |
| Nominal speed                      | rpm | 200       | 100        | 50          | 167 - 200 | 83 - 100  | 42 - 50   |
| Nominal torque <sup>1</sup>        | Nm  | 5.6 - 7.5 | 9.8 - 13.1 | 15.0 - 20.1 | 10.1      | 17.6      | 27.0      |
| Intermittent torque (S2 - 15 mins) | Nm  | 13.2      | 22.8       | 35.1        | 16.9      | 29.3      | 45.0      |

| Motor data                            |     |        |        |        |        |        |        |
|---------------------------------------|-----|--------|--------|--------|--------|--------|--------|
| Part number                           |     | 781102 | 781103 | 781104 | 781106 | 781107 | 781108 |
| Nominal power                         | W   | 157    | 210    | 210    | 236    | 283    | 283    |
| Nominal voltage                       | V   | 12     | 24     | 48     | 12     | 24     | 48     |
| Nominal speed                         | rpm | 3000   | 3000   | 3000   | 2500   | 3000   | 3000   |
| Continuous torque (S1)                | Nm  | 0.50   | 0.67   | 0.67   | 0.90   | 0.90   | 0.90   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 1.17   | 1.17   | 1.17   | 1.50   | 1.50   | 1.50   |
| Weight                                | Kg  | 3.60   | 3.60   | 3.60   | 4.00   | 4.00   | 4.00   |
| Stack length                          | mm  | 50     | 50     | 50     | 75     | 75     | 75     |
| Length                                | mm  | 153    | 153    | 153    | 183    | 183    | 183    |

| Gearbox data                                            |    |        |        |        |
|---------------------------------------------------------|----|--------|--------|--------|
| Part number                                             |    | 735900 | 735901 | 735902 |
| Ratio                                                   | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup>                | Nm | 30.0   | 30.0   | 30.0   |
| Max. intermittent torque                                | Nm | 48.0   | 48.0   | 48.0   |
| Efficiency                                              | %  | 75     | 65     | 50     |
| Max. axial load (dynamic)                               | N  | 600    | 600    | 600    |
| Max. radial load, 12mm from flange                      | N  | 800    | 800    | 800    |
| Weight                                                  | Kg | 1.5    | 1.5    | 1.5    |
| Gear material                                           |    | Bronze | Bronze | Bronze |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |    |        |        |        |

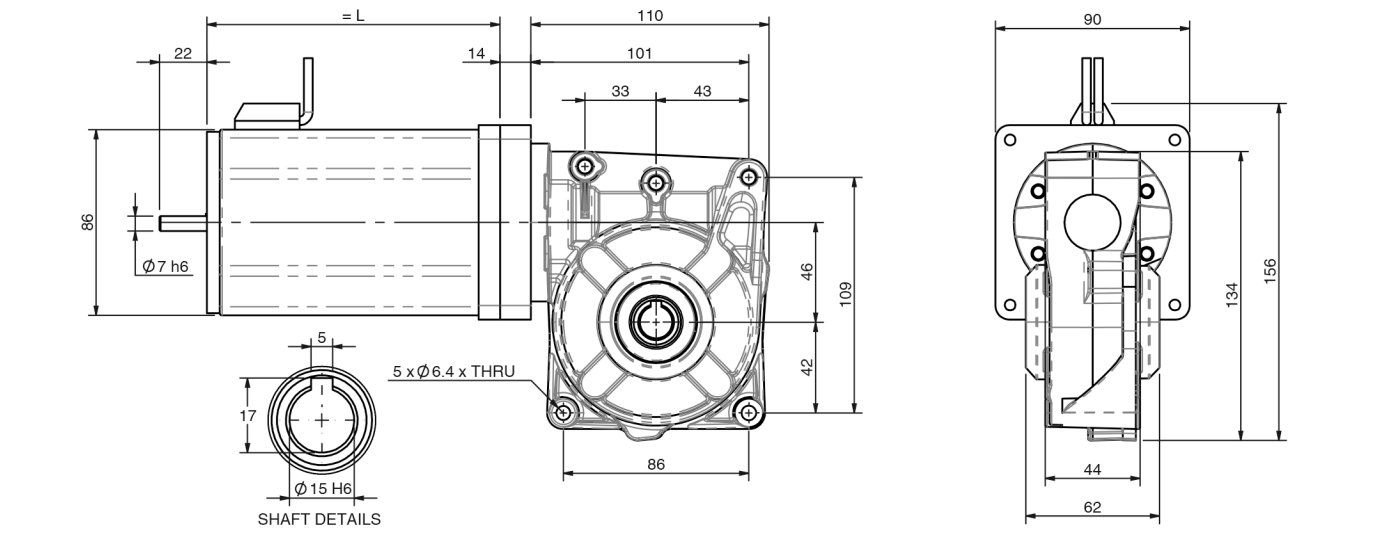
| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      |
| Mounting flange         | 781279      | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |

PBL86-GB12

BLDC right-angle geared motor

48 V // 419 - 586 W // 67 - 267 rpm // 11.3 - 48.0 Nm

all dimensions in mm



| Combination data                   |     |          |          |          |          |          |          |
|------------------------------------|-----|----------|----------|----------|----------|----------|----------|
| Motor                              |     | PBL86-55 | PBL86-55 | PBL86-55 | PBL86-80 | PBL86-80 | PBL86-80 |
| Voltage                            | V   | 48       | 48       | 48       | 48       | 48       | 48       |
| Nominal motor power                | W   | 419      | 419      | 419      | 586      | 586      | 586      |
| Gearbox ratio                      | :1  | 15       | 30       | 60       | 15       | 30       | 60       |
| Nominal speed                      | rpm | 267      | 133      | 67       | 267      | 133      | 67       |
| Nominal torque <sup>1</sup>        | Nm  | 11.3     | 19.5     | 30.0     | 15.8     | 27.3     | 30.0     |
| Intermittent torque (S2 - 15 mins) | Nm  | 19.7     | 34.1     | 48.0     | 27.6     | 47.8     | 48.0     |

| Motor data                            |     |        |        | Connection details |               |          |
|---------------------------------------|-----|--------|--------|--------------------|---------------|----------|
| Part number                           |     | 776624 | 776625 | Lead colour        | Lead gauge    | Function |
| Nominal power                         | W   | 419    | 586    | Red                | UL1569/26 AWG | VCC      |
| Nominal voltage                       | V   | 48     | 48     | Black              | UL1569/26 AWG | GND      |
| Nominal speed                         | rpm | 4000   | 4000   | Blue               | UL1569/26 AWG | Hall A   |
| Continuous torque (S1)                | Nm  | 1.00   | 1.40   | Green              | UL1569/26 AWG | Hall B   |
| Intermittent torque (S2 - 15 minutes) | Nm  | 1.75   | 2.45   | White              | UL1569/26 AWG | Hall C   |
| Weight                                | Kg  | 3.20   | 4.20   | Red                | UL1569/14 AWG | Phase U  |
| Stack length                          | mm  | 55     | 80     | Yellow             | UL1569/14 AWG | Phase V  |
| Length                                | mm  | 111    | 136    | Black              | UL1569/14 AWG | Phase W  |

| Gearbox data                                            |    |        |        |        |
|---------------------------------------------------------|----|--------|--------|--------|
| Part number                                             |    | 735900 | 735901 | 735902 |
| Ratio                                                   | :1 | 15     | 30     | 60     |
| Max. continuous torque (S1) <sup>2</sup>                | Nm | 30.0   | 30.0   | 30.0   |
| Max. intermittent torque                                | Nm | 48.0   | 48.0   | 48.0   |
| Efficiency                                              | %  | 75     | 65     | 50     |
| Max. axial load (dynamic)                               | N  | 600    | 600    | 600    |
| Max. radial load, 12mm from flange                      | N  | 800    | 800    | 800    |
| Weight                                                  | Kg | 1.5    | 1.5    | 1.5    |
| Gear material                                           |    | Bronze | Bronze | Bronze |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |    |        |        |        |

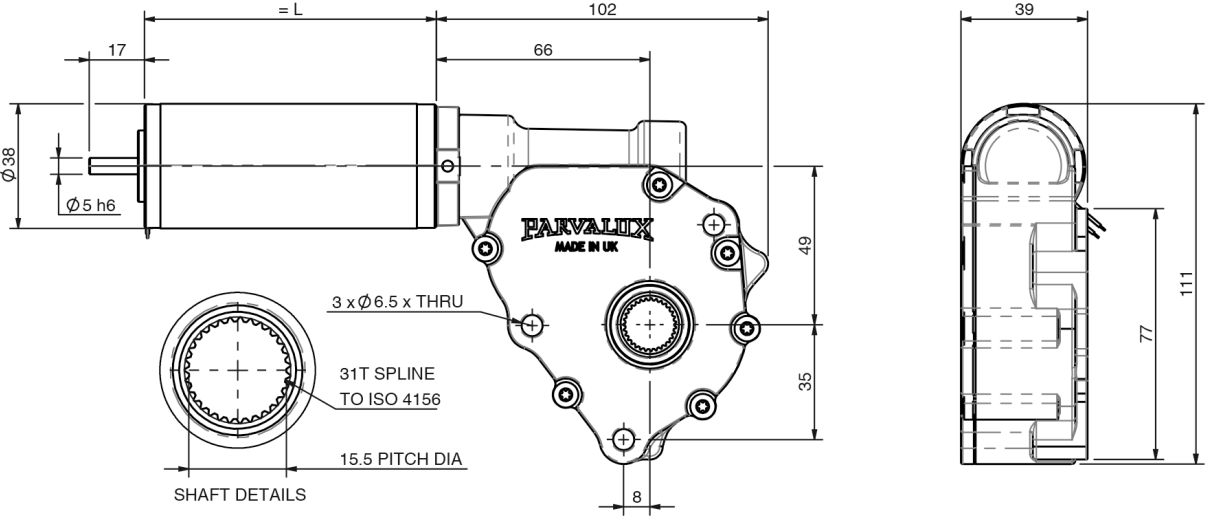
| Combination accessories |             |                     |             |            |             |
|-------------------------|-------------|---------------------|-------------|------------|-------------|
| Brake                   | Part number | Encoder             | Part Number | Controller | Part Number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15   | 738590      |
| Mounting flange         | 781284      | Incremental 10-pin  | 919386      |            |             |
|                         |             | Differential 10-pin | 919388      |            |             |

# Combinations

# GB56

Supplied as standard with a hollow shaft, the GB56 right-angle gearbox is compatible with the RE38 PMDC motor, offering high levels of torque in a compact, slimline package.

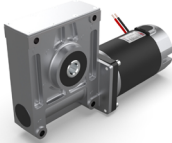
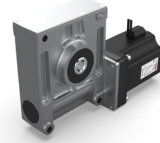
|           |                                                                                   |                           |  |
|-----------|-----------------------------------------------------------------------------------|---------------------------|--|
| RE38-GB56 |  | Max. speed <b>108 rpm</b> |  |
|           |                                                                                   | Max. power <b>40 W</b>    |  |
|           |                                                                                   | Max. torque <b>4.5 Nm</b> |  |

|                                                                                     |             |                     |             |            |             |                 |             |         |         |         |         |
|-------------------------------------------------------------------------------------|-------------|---------------------|-------------|------------|-------------|-----------------|-------------|---------|---------|---------|---------|
| RE38-GB56                                                                           |             |                     |             |            |             |                 |             |         |         |         |         |
|  |             |                     |             |            |             |                 |             |         |         |         |         |
| all dimensions in mm                                                                |             |                     |             |            |             |                 |             |         |         |         |         |
| 24 - 48 V // 24 - 40 W // 46 - 108 rpm // 1.2 - 4.5 Nm                              |             |                     |             |            |             |                 |             |         |         |         |         |
| Combination data                                                                    |             |                     |             |            |             |                 |             |         |         |         |         |
| Motor                                                                               |             | RE38-25             | RE38-25     | RE38-25    | RE38-25     | RE38-25         | RE38-40     | RE38-40 | RE38-40 | RE38-40 | RE38-40 |
| Voltage                                                                             | V           | 24 - 48             | 24 - 48     | 24 - 48    | 24 - 48     | 24 - 48         | 24 - 48     | 24 - 48 | 24 - 48 | 24 - 48 | 24 - 48 |
| Nominal motor power                                                                 | W           | 24                  | 24          | 24         | 24          | 24              | 40          | 40      | 40      | 40      | 40      |
| Gearbox ratio                                                                       | :1          | 30                  | 40          | 48         | 60          | 70              | 30          | 40      | 48      | 60      | 70      |
| Nominal speed                                                                       | rpm         | 108                 | 81          | 68         | 54          | 46              | 107         | 80      | 67      | 53      | 46      |
| Nominal torque <sup>1</sup>                                                         | Nm          | 1.2                 | 1.5         | 1.7        | 1.8         | 1.8             | 2.1         | 2.6     | 2.9     | 3.1     | 3.0     |
| Intermittent torque (S2 - 15 mins)                                                  | Nm          | 1.9                 | 2.4         | 2.6        | 2.8         | 2.8             | 3.2         | 3.9     | 4.3     | 4.6     | 4.5     |
| Motor data                                                                          |             |                     |             |            |             |                 |             |         |         |         |         |
| Part number                                                                         |             | 857662              | 857663      | 857664     | 857665      |                 |             |         |         |         |         |
| Nominal power                                                                       | W           | 24                  | 24          | 40         | 40          |                 |             |         |         |         |         |
| Nominal voltage                                                                     | V           | 24                  | 48          | 24         | 48          |                 |             |         |         |         |         |
| Nominal speed                                                                       | rpm         | 3250                | 3250        | 3200       | 3200        |                 |             |         |         |         |         |
| Continuous torque (S1)                                                              | Nm          | 0.07                | 0.07        | 0.12       | 0.12        |                 |             |         |         |         |         |
| Intermittent torque (S2 - 15 minutes)                                               | Nm          | 0.11                | 0.11        | 0.18       | 0.18        |                 |             |         |         |         |         |
| Weight                                                                              | Kg          | 0.30                | 0.30        | 0.40       | 0.40        |                 |             |         |         |         |         |
| Stack length                                                                        | mm          | 25                  | 25          | 40         | 40          |                 |             |         |         |         |         |
| Length                                                                              | mm          | 70                  | 70          | 90         | 90          |                 |             |         |         |         |         |
| Gearbox data                                                                        |             |                     |             |            |             |                 |             |         |         |         |         |
| Part number                                                                         |             | 861141              | 861142      | 861143     | 861144      | 861145          |             |         |         |         |         |
| Ratio                                                                               | :1          | 30                  | 40          | 48         | 60          | 70              |             |         |         |         |         |
| Max. continuous torque (S1) <sup>2</sup>                                            | Nm          | 8.0                 | 8.0         | 8.0        | 8.0         | 8.0             |             |         |         |         |         |
| Max. intermittent torque                                                            | Nm          | 50.0                | 50.0        | 50.0       | 50.0        | 50.0            |             |         |         |         |         |
| Efficiency                                                                          | %           | 59                  | 54          | 50         | 43          | 36              |             |         |         |         |         |
| Max. axial load (dynamic)                                                           | N           | 300                 | 300         | 300        | 300         | 300             |             |         |         |         |         |
| Max. radial load, 12mm from flange                                                  | N           | 400                 | 400         | 400        | 400         | 400             |             |         |         |         |         |
| Weight                                                                              | Kg          | 0.6                 | 0.6         | 0.6        | 0.6         | 0.6             |             |         |         |         |         |
| Gear material                                                                       |             | Composite           | Composite   | Composite  | Composite   | Composite       |             |         |         |         |         |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed                             |             |                     |             |            |             |                 |             |         |         |         |         |
| Combination accessories                                                             |             |                     |             |            |             |                 |             |         |         |         |         |
| Brake                                                                               | Part number | Encoder             | Part Number | Controller | Part Number | Shaft extension | Part number |         |         |         |         |
| N/A                                                                                 | -           | Incremental 5-pin   | 735912      | SC 50/15   | 738950      | N/A             | -           |         |         |         |         |
|                                                                                     |             | Incremental 10-pin  | 919386      |            |             |                 |             |         |         |         |         |
|                                                                                     |             | Differential 10-pin | 919388      |            |             |                 |             |         |         |         |         |
|                                                                                     |             | Mounting flange     | 781275      |            |             |                 |             |         |         |         |         |

# Combinations

# GB9

Supplied as standard with a hollow shaft, the GB9 right-angle gearbox is compatible with the BRx90 PMDC motor and the PBL86 BLDC motor. Add a shaft extension kit to the GB9 for further customisation.

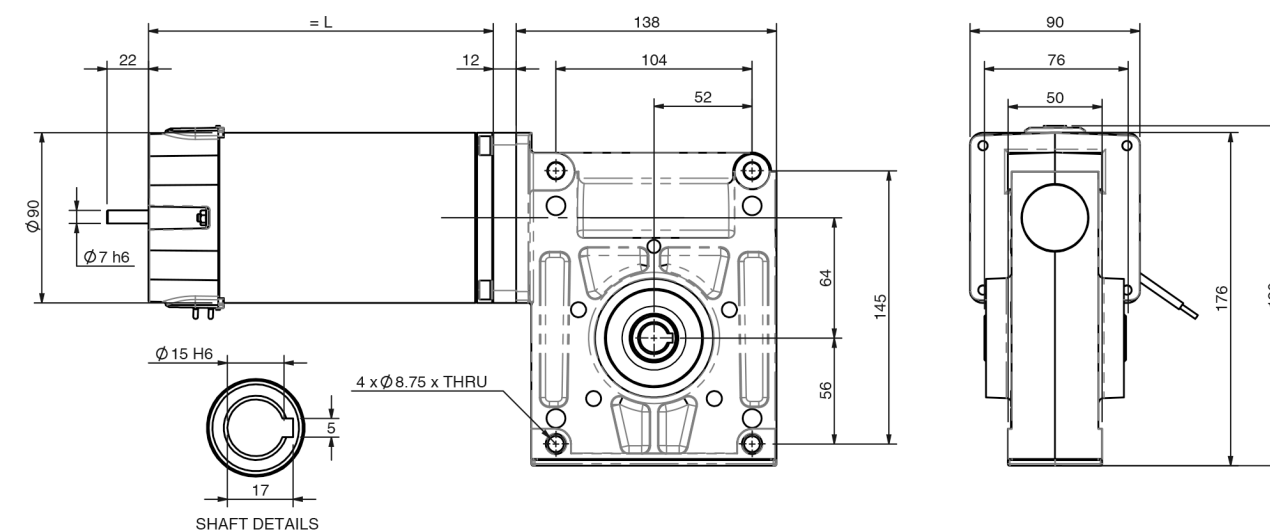
|           |                                                                                    |                            |  |
|-----------|------------------------------------------------------------------------------------|----------------------------|--|
| BRx90-GB9 |   | Max. speed <b>200 rpm</b>  |  |
|           |                                                                                    | Max. power <b>283 W</b>    |  |
|           |                                                                                    | Max. torque <b>58.5 Nm</b> |  |
| PBL86-GB9 |  | Max. speed <b>267 rpm</b>  |  |
|           |                                                                                    | Max. power <b>586 W</b>    |  |
|           |                                                                                    | Max. torque <b>80.0 Nm</b> |  |

## BRx90-GB9

PMDC right-angle geared motor

12 - 48 V // 157 - 283 W // 42 - 200 rpm // 6.4 - 58.5 Nm

all dimensions in mm



| Combination data                                        |     |             |                     |             |             |            |             |                 |             |
|---------------------------------------------------------|-----|-------------|---------------------|-------------|-------------|------------|-------------|-----------------|-------------|
| Motor                                                   |     | BRx90-50    | BRx90-50            | BRx90-50    | BRx90-75    | BRx90-75   | BRx90-75    |                 |             |
| Voltage                                                 | V   | 12 - 48     | 12 - 48             | 12 - 48     | 12 - 48     | 12 - 48    | 12 - 48     |                 |             |
| Nominal motor power                                     | W   | 157 - 210   | 157 - 210           | 157 - 210   | 236 - 283   | 236 - 283  | 236 - 283   |                 |             |
| Gearbox ratio                                           | :1  | 15          | 30                  | 60          | 15          | 30         | 60          |                 |             |
| Nominal speed                                           | rpm | 200         | 100                 | 50          | 167 - 200   | 83 - 100   | 42 - 50     |                 |             |
| Nominal torque <sup>1</sup>                             | Nm  | 6.4 - 8.5   | 11.3 - 15.1         | 19.5 - 26.1 | 11.5        | 20.3       | 35.1        |                 |             |
| Intermittent torque (S2 - 15 mins)                      | Nm  | 14.9        | 26.3                | 45.6        | 19.1        | 33.8       | 58.5        |                 |             |
|                                                         |     |             |                     |             |             |            |             |                 |             |
| Motor data                                              |     |             |                     |             |             |            |             |                 |             |
| Part number                                             |     | 781102      | 781103              | 781104      | 781106      | 781107     | 781108      |                 |             |
| Nominal power                                           | W   | 157         | 210                 | 210         | 236         | 283        | 283         |                 |             |
| Nominal voltage                                         | V   | 12          | 24                  | 48          | 12          | 24         | 48          |                 |             |
| Nominal speed                                           | rpm | 3000        | 3000                | 3000        | 3000        | 3000       | 3000        |                 |             |
| Continuous torque (S1)                                  | Nm  | 0.50        | 0.67                | 0.67        | 0.90        | 0.90       | 0.90        |                 |             |
| Intermittent torque (S2 - 15 minutes)                   | Nm  | 1.17        | 1.17                | 1.17        | 1.50        | 1.50       | 1.50        |                 |             |
| Weight                                                  | Kg  | 3.60        | 3.60                | 3.60        | 4.00        | 4.00       | 4.00        |                 |             |
| Stack length                                            | mm  | 50          | 50                  | 50          | 75          | 75         | 75          |                 |             |
| Length                                                  | mm  | 153         | 153                 | 153         | 183         | 183        | 183         |                 |             |
|                                                         |     |             |                     |             |             |            |             |                 |             |
| Gearbox data                                            |     |             |                     |             |             |            |             |                 |             |
| Part number                                             |     | 735900      | 735901              | 735902      |             |            |             |                 |             |
| Ratio                                                   | :1  | 15          | 30                  | 60          |             |            |             |                 |             |
| Max. continuous torque (S1) <sup>2</sup>                | Nm  | 50.0        | 50.0                | 50.0        |             |            |             |                 |             |
| Max. intermittent torque                                | Nm  | 80.0        | 80.0                | 80.0        |             |            |             |                 |             |
| Efficiency                                              | %   | 85          | 75                  | 65          |             |            |             |                 |             |
| Max. axial load (dynamic)                               | N   | 600         | 600                 | 600         |             |            |             |                 |             |
| Max. radial load, 12mm from flange                      | N   | 800         | 800                 | 800         |             |            |             |                 |             |
| Weight                                                  | Kg  | 2.3         | 2.3                 | 2.3         |             |            |             |                 |             |
| Gear material                                           |     | Composite   | Composite           | Composite   |             |            |             |                 |             |
| <sup>2</sup> S1 duty cycle based on 3000rpm input speed |     |             |                     |             |             |            |             |                 |             |
|                                                         |     |             |                     |             |             |            |             |                 |             |
| Combination accessories                                 |     |             |                     |             |             |            |             |                 |             |
| Brake                                                   |     | Part number | Encoder             |             | Part Number | Controller | Part Number | Shaft extension | Part number |
| 1.5 Nm brake                                            |     | 735914      | Incremental 5-pin   |             | 735912      | SC 50/15   | 738590      | GB9 shaft kit   | 735898      |
| Mounting flange                                         |     | 781279      | Incremental 10-pin  |             | 919386      |            |             |                 |             |
|                                                         |     |             | Differential 10-pin |             | 919388      |            |             |                 |             |

## BLDC right-angle geared motor

all dimensions in mm



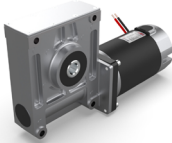
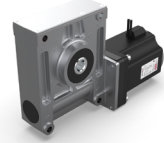
| Combination accessories |             |                     |             |             |             |                 |             |
|-------------------------|-------------|---------------------|-------------|-------------|-------------|-----------------|-------------|
| Brake                   |             | Encoder             |             | Controller  |             | Shaft extension |             |
| Part number             | Part Number | Part Number         | Part Number | Part Number | Part Number | Part number     | Part number |
| 1.5 Nm brake            | 735914      | Incremental 5-pin   | 735912      | SC 50/15    | 738590      | GB9 shaft kit   | 735898      |
| Mounting flange         | 781284      | Incremental 10-pin  | 919386      |             |             |                 |             |
|                         |             | Differential 10-pin | 919388      |             |             |                 |             |

This image shows a full page of blank handwriting practice paper. It features approximately 28 evenly spaced horizontal red lines across the entire page, providing a guide for letter height and placement. The background is plain white, and there are no margins, text, or other markings present.

Combinations

# GB65

Supplied as standard with a hollow shaft, the GB65 right-angle gearbox is compatible with the BRx90 PMDC motor and the PBL86 BLDC motor. Add a shaft extension kit to the GB65 for further customisation.

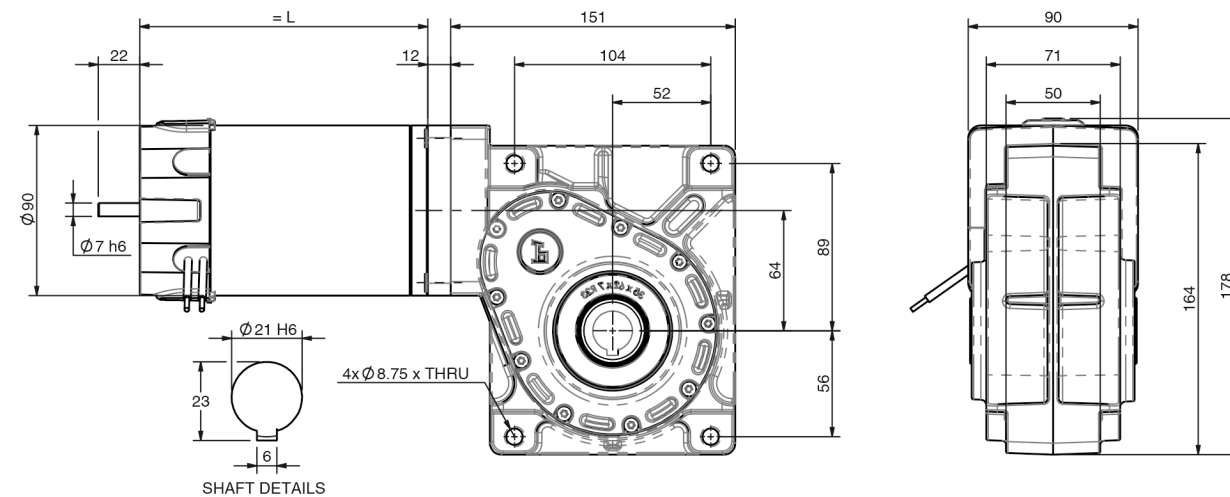
|            |                                                                                    |                             |  |
|------------|------------------------------------------------------------------------------------|-----------------------------|--|
| BRx90-GB65 |   | Max. speed <b>150 rpm</b>   |  |
|            |                                                                                    | Max. power <b>283 W</b>     |  |
|            |                                                                                    | Max. torque <b>108.0 Nm</b> |  |
| PBL86-GB65 |  | Max. speed <b>200 rpm</b>   |  |
|            |                                                                                    | Max. power <b>586 W</b>     |  |
|            |                                                                                    | Max. torque <b>176.4 Nm</b> |  |

## BRx90-GB65

PMDC right-angle geared motor

12 - 48 V // 157 - 283 W // 19 - 150 rpm // 8.1 - 103.2 Nm

all dimensions in mm



| Combination data                                                                                           |             |                     |             |             |             |                 |             |           |           |           |           |
|------------------------------------------------------------------------------------------------------------|-------------|---------------------|-------------|-------------|-------------|-----------------|-------------|-----------|-----------|-----------|-----------|
| Motor                                                                                                      |             | BRx90-50            | BRx90-50    | BRx90-50    | BRx90-50    | BRx90-50        | BRx90-75    | BRx90-75  | BRx90-75  | BRx90-75  | BRx90-75  |
| Voltage                                                                                                    | V           | 12 - 48             | 12 - 48     | 12 - 48     | 12 - 48     | 12 - 48         | 12 - 48     | 12 - 48   | 12 - 48   | 12 - 48   | 12 - 48   |
| Nominal motor power                                                                                        | W           | 157 - 210           | 157 - 210   | 157 - 210   | 157 - 210   | 157 - 210       | 236 - 283   | 236 - 283 | 236 - 283 | 236 - 283 | 236 - 283 |
| Gearbox ratio                                                                                              | :1          | 20                  | 40          | 80          | 120         | 160             | 20          | 40        | 80        | 120       | 160       |
| Nominal speed                                                                                              | rpm         | 150                 | 75          | 38          | 25          | 19              | 125 - 150   | 63 - 75   | 31 - 38   | 21 - 25   | 16 - 19   |
| Nominal torque <sup>1</sup>                                                                                | Nm          | 8.1 - 10.9          | 15.2 - 20.4 | 28.0 - 37.5 | 36.0 - 48.2 | 34.4 - 46.1     | 14.6        | 27.4      | 50.4      | 64.8      | 61.9      |
| Intermittent torque (S2 - 15 mins)                                                                         | Nm          | 19.0                | 35.6        | 65.5        | 84.2        | 80.5            | 24.3        | 45.6      | 84.0      | 108.0     | 103.2     |
| Motor data                                                                                                 |             |                     |             |             |             |                 |             |           |           |           |           |
| Part number                                                                                                |             | 781102              | 781103      | 781104      | 781106      | 781107          | 781108      |           |           |           |           |
| Nominal power                                                                                              | W           | 157                 | 210         | 210         | 236         | 283             | 283         |           |           |           |           |
| Nominal voltage                                                                                            | V           | 12                  | 24          | 48          | 12          | 24              | 48          |           |           |           |           |
| Nominal speed                                                                                              | rpm         | 3000                | 3000        | 3000        | 2500        | 3000            | 3000        |           |           |           |           |
| Continuous torque (S1)                                                                                     | Nm          | 0.50                | 0.67        | 0.67        | 0.90        | 0.90            | 0.90        |           |           |           |           |
| Intermittent torque (S2 - 15 minutes)                                                                      | Nm          | 1.17                | 1.17        | 1.17        | 1.50        | 1.50            | 1.50        |           |           |           |           |
| Weight                                                                                                     | Kg          | 3.60                | 3.60        | 3.60        | 4.00        | 4.00            | 4.00        |           |           |           |           |
| Stack length                                                                                               | mm          | 50                  | 50          | 50          | 75          | 75              | 75          |           |           |           |           |
| Length                                                                                                     | mm          | 153                 | 153         | 153         | 183         | 183             | 183         |           |           |           |           |
| Gearbox data                                                                                               |             |                     |             |             |             |                 |             |           |           |           |           |
| Part number                                                                                                |             | 854060              | 853270      | 827936      | 827934      | 827943          |             |           |           |           |           |
| Ratio                                                                                                      | :1          | 20                  | 40          | 80          | 120         | 160             |             |           |           |           |           |
| Max. continuous torque (S1) <sup>2</sup>                                                                   | Nm          | 120.0               | 120.0       | 120.0       | 120.0       | 120.0           |             |           |           |           |           |
| Max. intermittent torque                                                                                   | Nm          | 300.0               | 300.0       | 300.0       | 300.0       | 300.0           |             |           |           |           |           |
| Efficiency                                                                                                 | %           | 81                  | 76          | 70          | 60          | 43              |             |           |           |           |           |
| Max. axial load (dynamic)                                                                                  | N           | 1750                | 1750        | 1750        | 1750        | 1750            |             |           |           |           |           |
| Max. radial load, 12mm from flange                                                                         | N           | 2335                | 2335        | 2335        | 2335        | 2335            |             |           |           |           |           |
| Weight                                                                                                     | Kg          | 3.5                 | 3.5         | 3.5         | 3.5         | 3.5             |             |           |           |           |           |
| Gear material <sup>3</sup>                                                                                 |             | S / B               | S / B       | S / B       | S / B       | S / B           |             |           |           |           |           |
| <sup>1</sup> S1 duty cycle based on 3000rpm input speed <sup>2</sup> Gear material: S = Steel / B = Bronze |             |                     |             |             |             |                 |             |           |           |           |           |
| Combination accessories                                                                                    |             |                     |             |             |             |                 |             |           |           |           |           |
| Brake                                                                                                      | Part number | Encoder             | Part Number | Controller  | Part Number | Shaft extension | Part number |           |           |           |           |
| 1.5 Nm brake                                                                                               | 735914      | Incremental 5-pin   | 735912      | SC 50/15    | 738590      | GB65 shaft kit  | 854742      |           |           |           |           |
| Mounting flange                                                                                            | 781279      | Incremental 10-pin  | 919386      |             |             |                 |             |           |           |           |           |
|                                                                                                            |             | Differential 10-pin | 919388      |             |             |                 |             |           |           |           |           |

## BLDC right-angle geared motor

all dimensions in mm



| Combination accessories |        |                     |        |             |        |                 |        |
|-------------------------|--------|---------------------|--------|-------------|--------|-----------------|--------|
| Brake                   |        | Encoder             |        | Controller  |        | Shaft extension |        |
| Part number             |        | Part Number         |        | Part Number |        | Part number     |        |
| 1.5 Nm brake            | 735914 | Incremental 5-pin   | 735912 | SC 50/15    | 738590 | GB65 shaft kit  | 854742 |
| Mounting flange         | 781284 | Incremental 10-pin  | 919386 |             |        |                 |        |
|                         |        | Differential 10-pin | 919388 |             |        |                 |        |

This image shows a full page of blank handwriting practice paper. It features evenly spaced horizontal red lines across the entire surface, providing a guide for letter height and placement. There are no margins, text, or other markings on the page.

# Modular accessories

Our range of modular accessories integrate seamlessly with the range through use of intelligently designed mounting flanges and fixings.

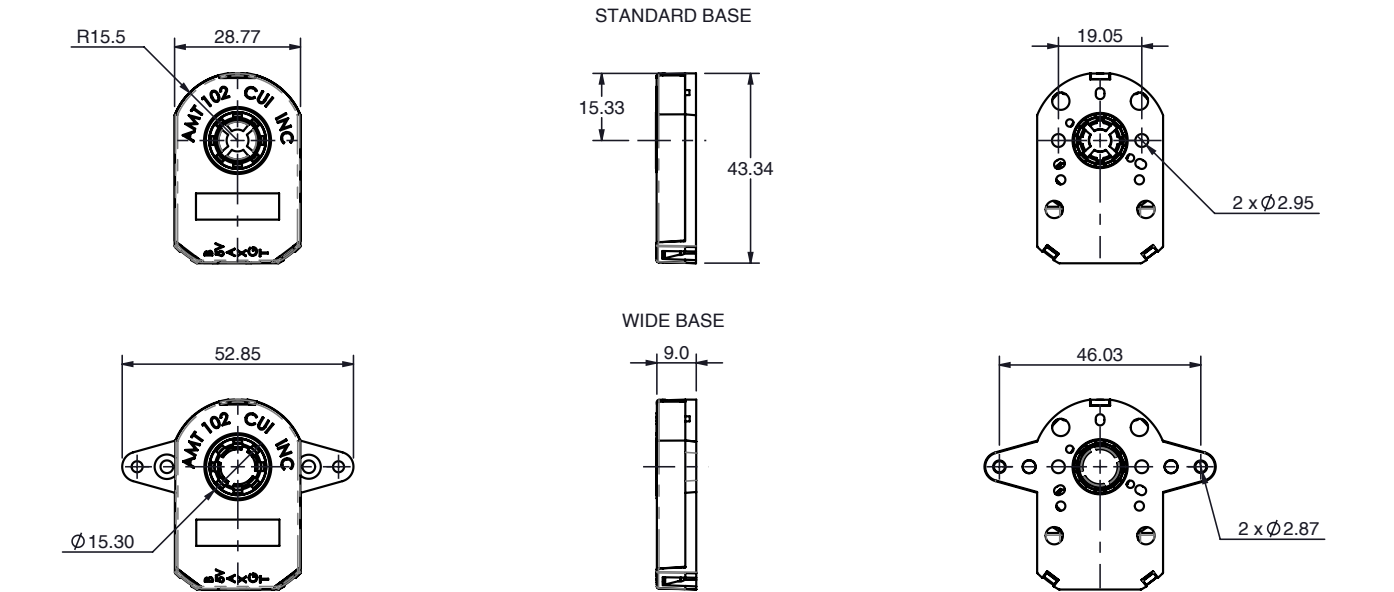
Fine tune your selection by adding a brake, encoder, or controller to your motor, and a shaft extension kit to your gearbox to ensure your configuration meets the exact requirements of your application.



Incremental encoder

Incremental encoder 5-pin 735912 // Incremental encoder 10-pin 919386

all dimensions in mm  
wiring details available on request



| Electrical data                    | Conditions / description       |    | min     | typ | max |
|------------------------------------|--------------------------------|----|---------|-----|-----|
| 1 Power supply (VDD)               | VDD                            | V  | 3.6     | 5.0 | 5.5 |
| 2 Current consumption <sup>1</sup> | with unloaded output           | mA |         | 6.0 |     |
| 3 Output high level                |                                | V  | VDD 0.8 |     |     |
| 4 Output low level                 |                                | V  |         |     | 0.4 |
| 5 Output current <sup>2</sup>      | CMOS sink / source per channel | mA |         |     | 2.0 |
| 6 Rise / fall time                 |                                | ns |         | 30  |     |

| Incremental characteristics                  | Conditions / description                                                        |     | min | typ  | max |
|----------------------------------------------|---------------------------------------------------------------------------------|-----|-----|------|-----|
| 1 Channels                                   | Quadrature A, B, and X index                                                    |     |     |      |     |
| 2 Waveform                                   | CMOS voltage square wave                                                        |     |     |      |     |
| 3 Phase difference                           | A leads B for CCW rotation (viewed from the front)                              | °   |     | 90   |     |
| 4 Quadrature resolutions <sup>1</sup>        | 48, 96, 100, 125, 192, 200, 250, 256, 384, 400, 500, 512, 800, 1000, 1024, 2048 | PPR |     |      |     |
| 5 Index <sup>2</sup>                         | one pulse per 360° rotation                                                     |     |     |      |     |
| 6 Accuracy                                   |                                                                                 | °   |     | 0.25 |     |
|                                              | 256, 512, 1024, 2048                                                            | %   | 49  | 50   | 51  |
| 7 Quadrature duty cycle (at each resolution) | 48, 96, 100, 125, 192, 200, 250, 384, 400, 500                                  | %   | 47  | 50   | 53  |
|                                              | 800, 1000                                                                       | %   | 43  | 50   | 56  |

<sup>1</sup> Resolution selected via adjustable DIP switch, pre-set to 2048 PPR. All resolutions are listed as pre-quadrature, meaning the final number of counts is PPR x 4

<sup>2</sup> Some stepper motors may leak a magnetic field causing the index pulse to not function properly (non-magnetic version available with 8 pulses per revolution)

| Mechanical data                         | Conditions / description                  |     | min | typ  | max   |
|-----------------------------------------|-------------------------------------------|-----|-----|------|-------|
| 1 Motor shaft length                    |                                           | mm  | 9   |      |       |
| 2 Weight                                |                                           | g   |     | 20.5 |       |
| 3 Axial play                            |                                           | mm  |     |      | ±0.3  |
| 4 Rotational speed (at each resolution) | 192, 284, 400, 500, 800, 1000, 1024, 2048 | rpm |     |      | 7500  |
|                                         | 48, 96, 100, 125, 200, 250, 256, 512      | rpm |     |      | 15000 |

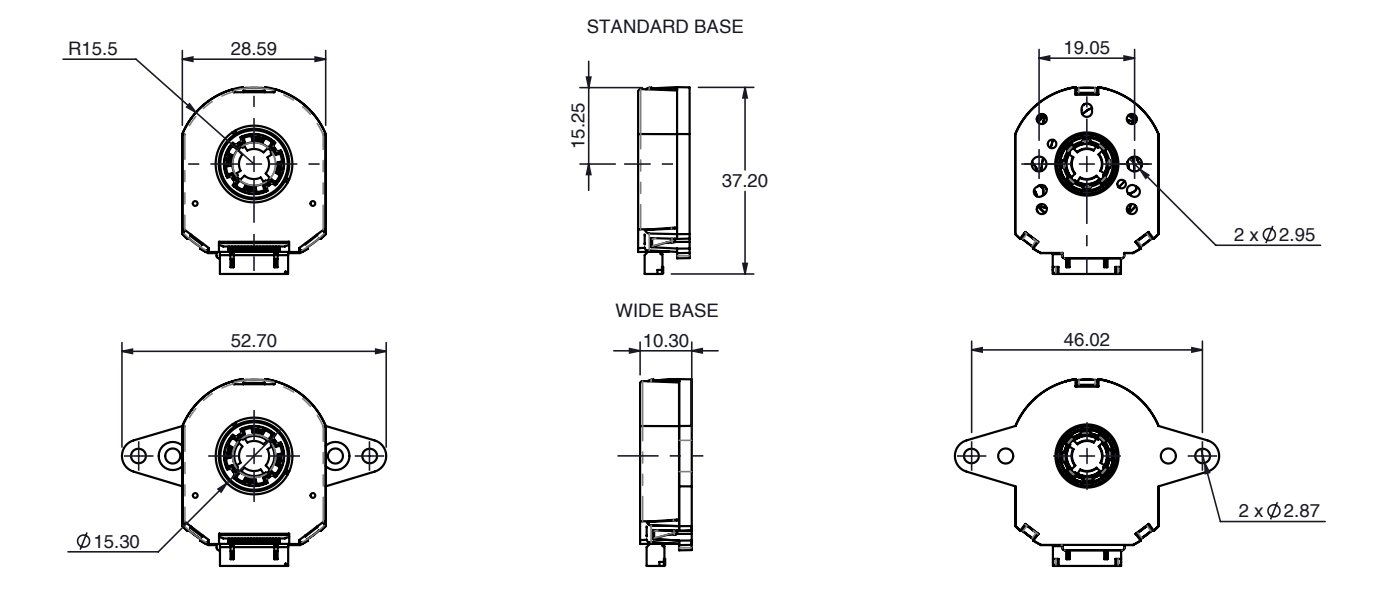
| Environmental                        | Conditions / description   |    | min | typ | max |
|--------------------------------------|----------------------------|----|-----|-----|-----|
| 1 Operating temperature <sup>1</sup> |                            | °C | -40 |     | 100 |
| 2 Humidity                           | non-condensing             | %  |     |     | 95  |
| 3 Vibration                          | 20~500 Hz, 1 hour each XYZ | G  |     |     | 10  |
| 4 Shock                              | 11 ms, ±XYZ direction      | G  |     |     | 50  |
| 5 RoHS                               | 2011 / 65 / EU             |    |     |     |     |

<sup>1</sup> Encoders with operating temperature of -40 - 125°C are available as a custom order

Differential encoder

919388

all dimensions in mm  
wiring details available on request



| Electrical data              | Conditions / description     |    | min     | typ | max |
|------------------------------|------------------------------|----|---------|-----|-----|
| 1 Power supply (VDD)         | VDD                          | V  | 4.5     | 5.0 | 5.5 |
| 2 Start-up time <sup>1</sup> |                              | ms |         | 200 |     |
| 3 Current consumption        | with unloaded output         | mA |         | 16  |     |
|                              | output high level            | V  | VDD 0.1 |     |     |
|                              | output low level             | V  |         |     | 0.1 |
|                              | output current (per channel) | mA |         |     | 15  |
|                              | rise/fall time               | ns |         | 8   |     |
|                              | output high level            | V  | 3       |     |     |
|                              | output low level             | V  |         |     | 0.1 |
|                              | output current (per channel) | mA |         |     | 25  |
|                              | rise/fall time               | ns | 7       | 11  | 20  |

<sup>1</sup> Encoder must be stationary during start-up

| Incremental characteristics                  | Conditions / description                                                        |     | min | typ | max |
|----------------------------------------------|---------------------------------------------------------------------------------|-----|-----|-----|-----|
| 1 Channels                                   | CMOS voltage (S) - A, B, Z / Quadrature line driver (Q) - A, A, B, B, Z, Z      |     |     |     |     |
| 2 Waveform                                   | CMOS voltage square wave                                                        |     |     |     |     |
| 3 Phase difference                           | A leads B for CCW rotation (viewed from the front)                              |     |     |     |     |
| 4 Quadrature resolutions <sup>1</sup>        | 48, 96, 100, 125, 192, 200, 250, 256, 384, 400, 500, 512, 800, 1000, 1024, 2048 | PPR |     |     |     |
| 5 Index <sup>2</sup>                         | one pulse per 360° rotation                                                     | °   |     | 0.2 |     |
| 6 Accuracy                                   |                                                                                 | %   | 49  | 50  | 51  |
|                                              | 256, 512, 1024, 2048                                                            | %   | 47  | 50  | 53  |
| 7 Quadrature duty cycle (at each resolution) | 48, 96, 100, 125, 192, 200, 250, 384, 400, 500                                  | %   | 43  | 50  | 56  |
|                                              | 800, 1000                                                                       | %   |     |     |     |

<sup>1</sup> Resolution selected via adjustable DIP switch, pre-set to 2048 PPR. All resolutions are listed as pre-quadrature, meaning the final number of counts is PPR x 4

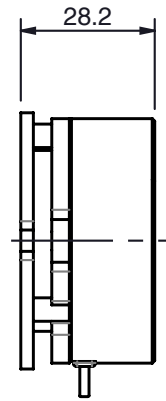
<sup>2</sup> Some stepper motors may leak a magnetic field causing the index pulse to not function properly (non-magnetic version available with 8 pulses per revolution)

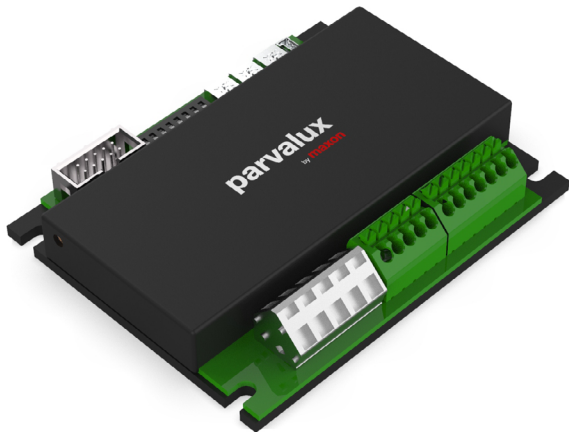
| Mechanical data                         | Conditions / description                                                        |     | min | typ  | max  |
|-----------------------------------------|---------------------------------------------------------------------------------|-----|-----|------|------|
| 1 Motor shaft length                    |                                                                                 | mm  | 9   |      |      |
| 2 Weight                                | Weight varies by configuration                                                  | g   |     | 15.7 |      |
| 3 Axial play                            |                                                                                 | mm  |     |      | ±0.3 |
|                                         | 48, 96, 100, 125, 182, 200, 250, 256, 384, 400, 500, 512, 800, 1000, 1024, 2048 | rpm |     |      | 8000 |
| 4 Rotational speed (at each resolution) | 360, 768, 1600, 2000, 4096                                                      | rpm |     |      | 4000 |
|                                         | 2500                                                                            | rpm |     |      | 2500 |

| Environmental           | Conditions / description   |    | min | typ | max |
|-------------------------|----------------------------|----|-----|-----|-----|
| 1 Operating temperature |                            | °C | -40 |     | 100 |
| 2 Humidity              | non-condensing             | %  |     |     | 85  |
| 3 Vibration             | 20~500 Hz, 1 hour each XYZ | G  |     |     | 5   |
| 4 Shock                 | 11 ms, ±XYZ direction      | G  |     |     | 200 |
| 5 RoHS                  | 2011 / 65 / EU             |    |     |     |     |

## 735914

all dimensions in mm

This image shows a full page of blank handwriting practice paper. It features evenly spaced horizontal red lines across the entire surface, providing a guide for letter height and placement. The background is white, and there are no margins or additional markings present.



| Electrical rating |                                                               |                                                                                                                                                          |                         |
|-------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 1                 | Nominal power supply voltage +V <sub>cc</sub>                 | VDC                                                                                                                                                      | 12 - 50                 |
| 2                 | Absolute supply voltage +V <sub>min</sub> / +V <sub>max</sub> | VDC                                                                                                                                                      | 10 / 56                 |
| 3                 | Output voltage (max.)                                         | V                                                                                                                                                        | 0.98 x +V <sub>cc</sub> |
| 4                 | Output current I <sub>cont</sub> / I <sub>max</sub> (< 10 s)  | A                                                                                                                                                        | 15 / 30                 |
| 5                 | Pulse width modulation frequency                              | kHz                                                                                                                                                      | 53.6                    |
| 6                 | Sampling rate PI speed controller                             | kHz                                                                                                                                                      | 5.36                    |
| 7                 | Max. efficiency                                               | %                                                                                                                                                        | 98                      |
| 8                 | Max. speed - PMDC motor                                       | Open loop: limited by max. permissible speed (motor) and max. output voltage (controller)<br>Closed loop: 5000 to 15,000 rpm, dependent on configuration |                         |
| 9                 | Max. speed - BLDC motor                                       | 2500 ... 30,000 rpm, dependent on configuration                                                                                                          |                         |
| 10                | Built-in filter choke                                         | nH; A                                                                                                                                                    | 3 x 200; 15             |

| Inputs and outputs |                                                  |                                                            |  |
|--------------------|--------------------------------------------------|------------------------------------------------------------|--|
| 1                  | Digital input - «Enable»                         | Logic +2.1 ... +30 VDC                                     |  |
| 2                  | Digital input - «Direction»                      | Logic +2.1 ... +30 VDC                                     |  |
| 3                  | Digital input - «Stop»                           | Logic +2.1 ... +30 VDC                                     |  |
| 4                  | Digital output - «Ready»                         | Logic signal output, 3.3 VDC, Ri: 2.2 kΩ, Push-Pull        |  |
| 5                  | Analog input - «Speed set value»                 | PWM signal (fixed amplitude 0 ... 5 VDC, 1 kHz ... 10 kHz) |  |
| 6                  | Digital hall sensors H1, H2, H3                  | +2.0 ... +24 VDC (internal pull-up)                        |  |
| 7                  | Digital incremental encoder signals A, A\, B, B\ | EIA RS422, max. 1 MHz, max. 100 kHz (single-ended)         |  |

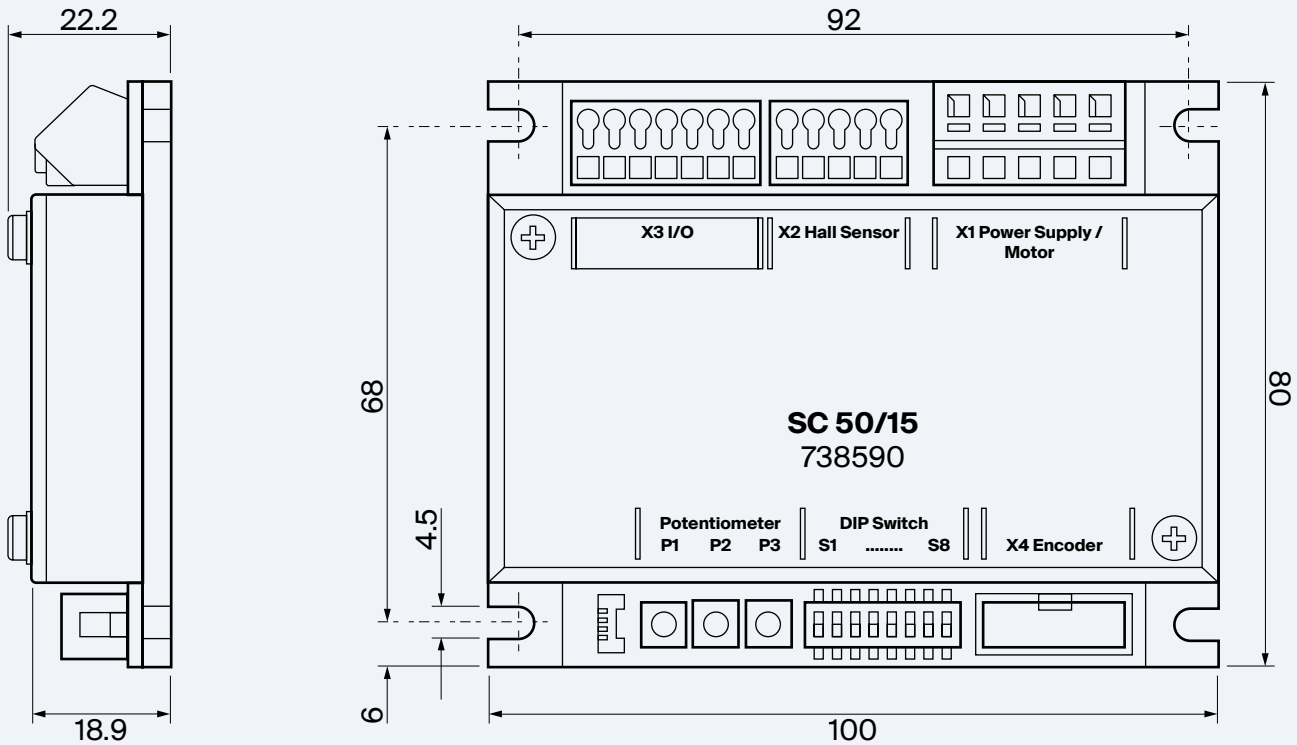
| Voltage outputs                 |                                           |
|---------------------------------|-------------------------------------------|
| 1                               | Sensor supply voltage V <sub>sensor</sub> |
| +5 VDC / I <sub>L</sub> ≤100 mA |                                           |

| Motor connections                                 |            |
|---------------------------------------------------|------------|
| 1                                                 | PMDC motor |
| + motor, - motor                                  |            |
| 2                                                 | BLDC motor |
| Motor winding 1, motor winding 2, motor winding 3 |            |

| Configuration                                                                                                                                                                                                                                                          |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1                                                                                                                                                                                                                                                                      | DIP switch     |
| SMD type, 8 position for the setting of: <ul style="list-style-type: none"><li>Motor Type</li><li>Control Mode</li><li>Speed Set Value Source</li><li>Speed Sensor Selection / Encoder Resolution</li><li>Hall Sensor Polarity</li><li>Speed Range Selection</li></ul> |                |
| 2                                                                                                                                                                                                                                                                      | Potentiometers |
| 3 x angular type 210° for the setting of: <ul style="list-style-type: none"><li>Speed Ramp/Speed Set Value</li><li>Continuous/Maximum Current Limit</li><li>Controller Gain</li></ul>                                                                                  |                |

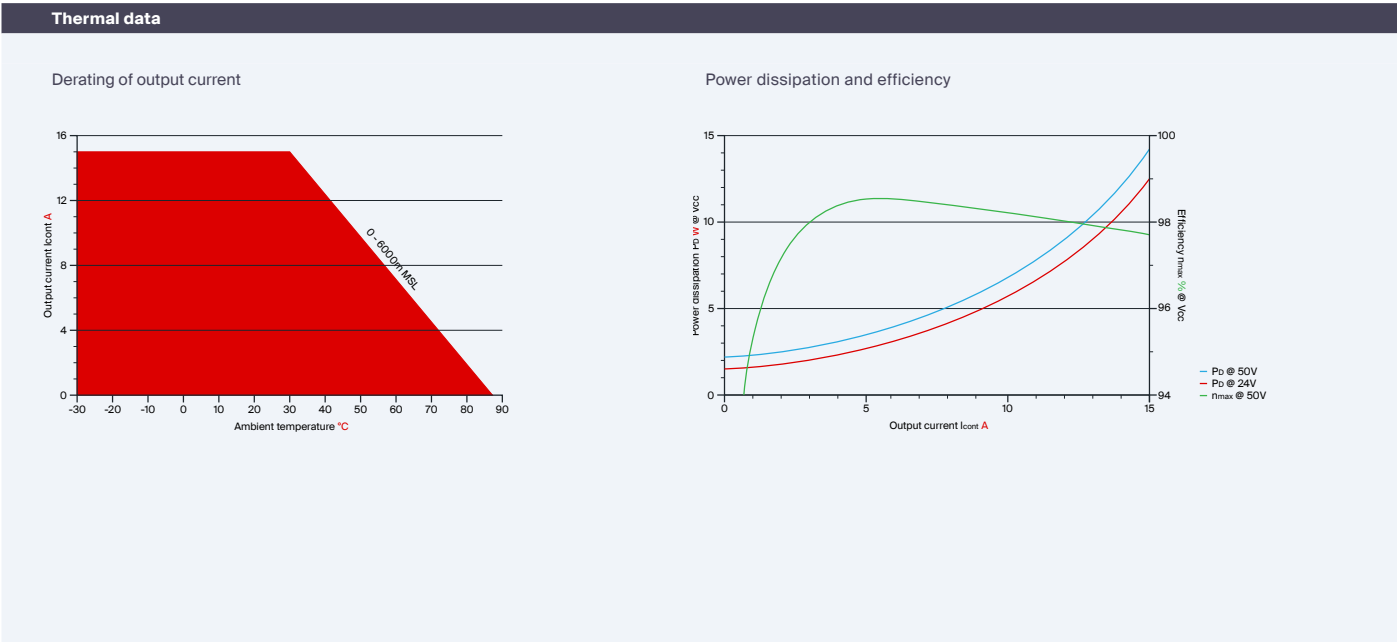
| Status indicators |                           |
|-------------------|---------------------------|
| 1                 | Device status - Operation |
| Green LED         |                           |
| 2                 | Device status - Error     |
| Red LED           |                           |

| Physical            |                        |                              |
|---------------------|------------------------|------------------------------|
| 1                   | Weight                 | g                            |
| 151                 |                        |                              |
| 2                   | Dimensions (L x W x H) | mm                           |
| 100.0 x 80.0 x 22.2 |                        |                              |
| 3                   | Mounting               | Slotted flange for M4 screws |



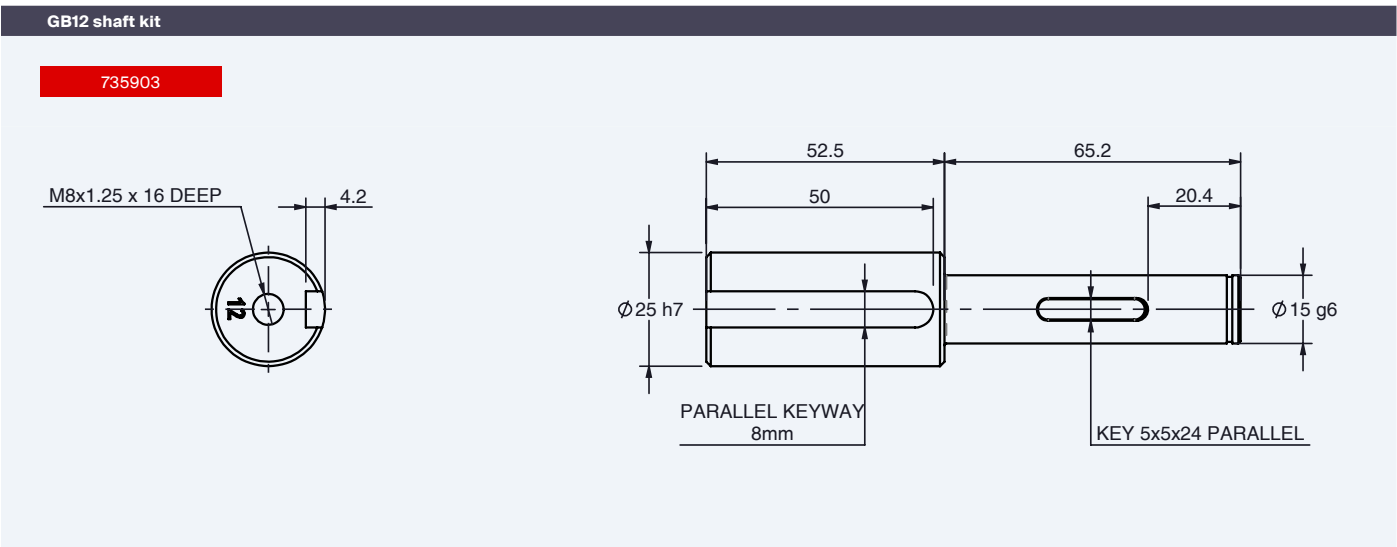
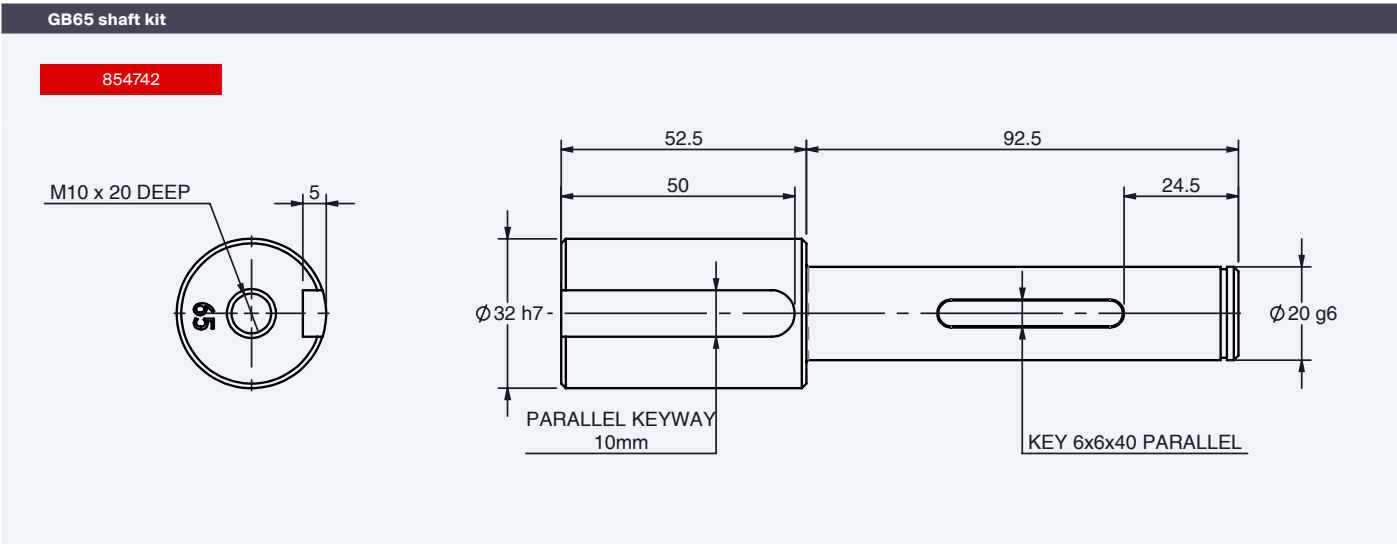
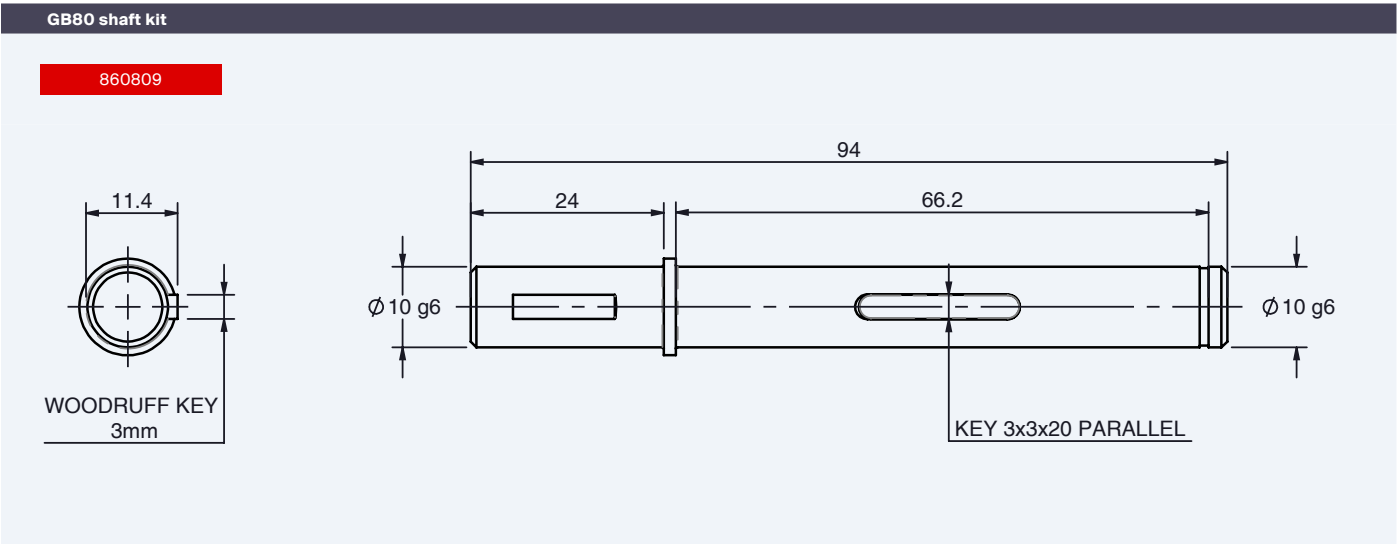
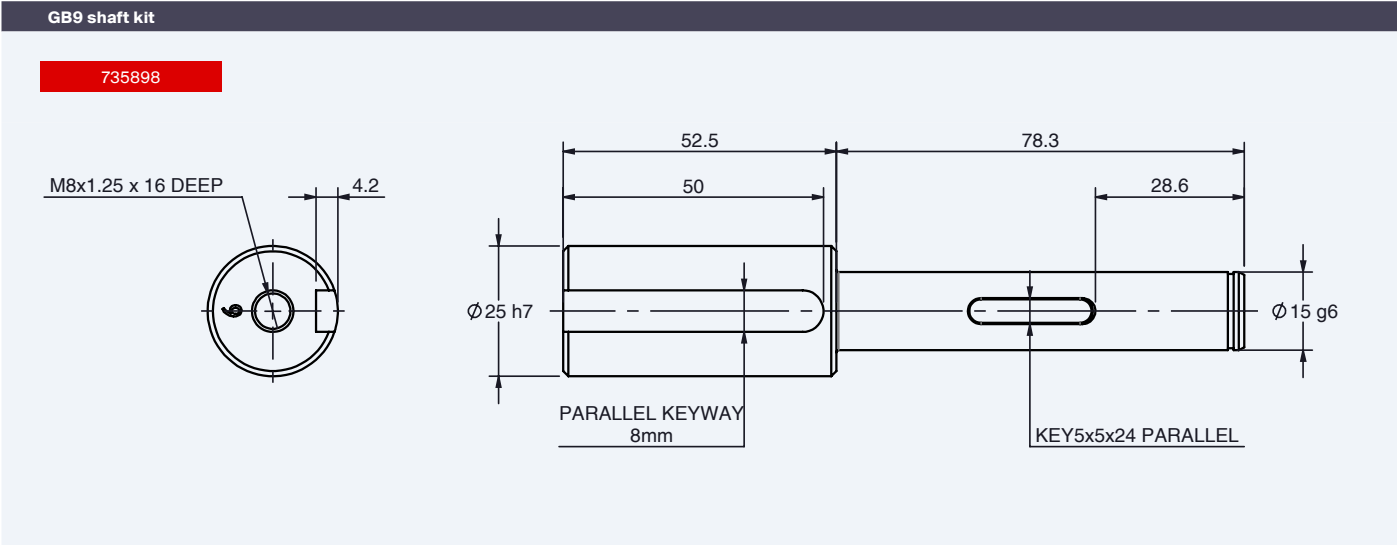
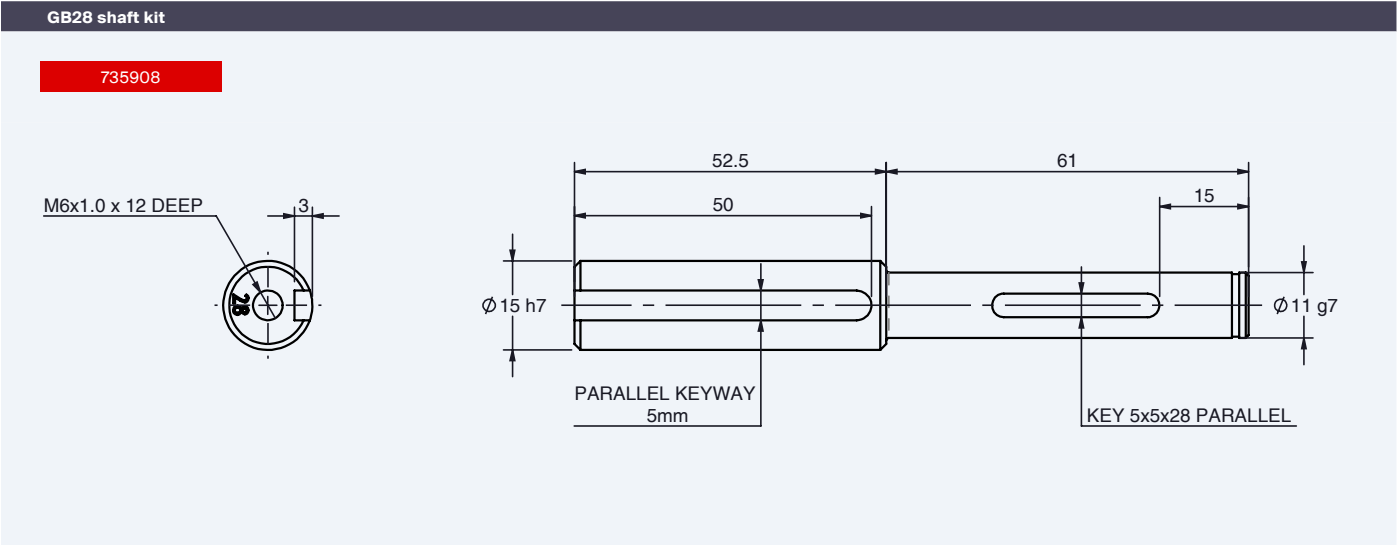
| Environment |                                  |    |                                       |
|-------------|----------------------------------|----|---------------------------------------|
| 1           | Temperature - Operation          | °C | -30 ... +30                           |
| 2           | Temperature - Extended range [a] | °C | +30 ... +84; Derating: -0.278 A/°C    |
| 3           | Temperature - Storage            | °C | -30 ... +85                           |
| 4           | Altitude [b]                     | m  | 0 ... 6000 MSL                        |
| 5           | Humidity                         | %  | 5 ... 90 (condensation not permitted) |

[a] Operation within the extended range is permitted. However, a respective derating (declination of output current I<sub>cont</sub>) as to the stated values will apply. [b] Operating altitude in meters above Mean Sea Level, MSL.



# Shaft extension kits

all dimensions in mm



## Shaft extension kit assembly

Our modular shaft extension kits are supplied, as standard, disassembled from their appropriate gearboxes. This enables you to select the output position of your shaft when assembling the shaft and gearbox yourself.

To assemble the shaft extension kit to your gearbox simply slide the shaft through the hollow shaft fully and fasten on the non-output side using the circlip included (shown in red on this image). For additional support in the assembly process please contact your local sales engineer.

***We know how to move***

# your project to market



## **Building automation**

- Access control
- Door automation
- Automated blinds
- + more



## **Industrial automation**

- Cleaning equipment
- Mixing equipment
- Printing equipment
- + more



## **Transport & logistics**

- Caravan movers
- Wiper systems
- Tarp pullers
- + more



## **Agriculture equipment**

- Honey extractors
- Feeding systems
- Ventilation systems
- + more



## **Materials handling**

- AGVs
- Conveyors
- Packaging automation
- + more



## **Mobility solutions**

- Patient hoists
- Powered wheelchairs
- Stairlifts
- + more



## **Leisure equipment**

- Amusement machines
- Clay pigeon traps
- Golf trolleys
- + more



## **Medical equipment**

- Air pumps
- Medical fluid pumps
- Ventilators
- + more

With over 75 years of experience in motor manufacture, Parvalux delivers high-performance, reliable solutions across a diverse range of industries and markets. From industrial automation and leisure to mobility solutions and agriculture equipment, we combine extensive engineering expertise with advanced manufacturing capabilities to create geared electric motors that meet your exact specification.

Our flexible approach, commitment to innovation, and rigorous quality control enable us to support both high-volume production and highly customized applications, making us a trusted partner for market-leaders worldwide.

Recommended solutions

# Building automation

Ease of access in public places is of paramount importance in ensuring the efficient and safe movement of people from one place to another. This in turn has seen growth in the need for reliable building automation solutions in a number of applications worldwide. With a higher level of competition in this sector, the Parvalux modular range can provide a quicker route from concept to manufacture, enabling you to gain a competitive advantage in this ever-growing market.



| Modular solution | Max. power (W) | Max. speed (rpm) | Max. torque (Nm) | Door automation | Access control | Page # |
|------------------|----------------|------------------|------------------|-----------------|----------------|--------|
| → RE38-PGx42     | 40             | 756              | 16.9             | ✓               | ✓              | 85     |
| → BRx42-PGx42    | 18             | 698              | 16.9             | ✓               | ✓              | 86     |
| → PBL42-PGx42    | 42             | 930              | 16.9             | ✓               | ✓              | 87     |
| → BRx52-GB80     | 69             | 200              | 10.0             | ✓               | ✓              | 93     |
| → BRx63-GB80     | 85             | 200              | 10.0             | ✓               | ✓              | 94     |
| → PBL60-GB80     | 157            | 200              | 13.0             | ✓               | ✓              | 95     |
| → BRx70-GB80     | 157            | 200              | 13.0             | ✓               | ✓              | 96     |
| → BRx70-GB12     | 157            | 200              | 26.4             | ✓               | ✓              | 100    |
| → BRx90-GB12     | 283            | 200              | 45.0             | ✓               | ✓              | 102    |
| → RE38-GB56      | 40             | 108              | 4.5              | ✓               | ✓              | 105    |



We also have extensive experience in providing drive solutions for pool cover closers and automatic blind systems. Contact your local sales engineer today to discuss your requirements.

Recommended solutions

# Materials handling

The modern warehouse sector has embraced motorised automated material handling equipment to support employee safety and drive efficiency. Parvalux has significant experience supporting some of the largest and most innovative intralogistics equipment manufacturers on the market today, and the introduction of the modular range enables us to expedite the design process of new projects at a faster rate, shortening the time to full scale production.



| Modular solution | Max. power (W) | Max. speed (rpm) | Max. torque (Nm) | Conveyors | ASRS | AGVs | Warehouse tugs | Page # |
|------------------|----------------|------------------|------------------|-----------|------|------|----------------|--------|
| → PBL42-PGx42    | 42             | 930              | 16.9             | ✓         | ✓    | ✓    |                | 85     |
| → PBL60-GB28     | 157            | 200              | 8.0              |           |      | ✓    |                | 91     |
| → PBL60-GB80     | 157            | 200              | 13.0             | ✓         | ✓    | ✓    |                | 95     |
| → BRx70-GB12     | 157            | 200              | 26.4             | ✓         | ✓    | ✓    | ✓              | 100    |
| → PBL70-GB12     | 415            | 300              | 46.2             | ✓         |      |      | ✓              | 101    |
| → BRx90-GB12     | 283            | 200              | 45.0             | ✓         | ✓    | ✓    | ✓              | 102    |
| → PBL86-GB12     | 586            | 267              | 48.0             | ✓         |      |      | ✓              | 103    |
| → BRx90-GB9      | 283            | 200              | 58.5             | ✓         | ✓    | ✓    | ✓              | 107    |
| → PBL86-GB9      | 586            | 267              | 80.0             | ✓         |      | ✓    | ✓              | 108    |
| → BRx90-GB65     | 283            | 150              | 108.0            | ✓         |      |      | ✓              | 111    |
| → PBL86-GB65     | 586            | 200              | 176.4            | ✓         |      |      | ✓              | 112    |

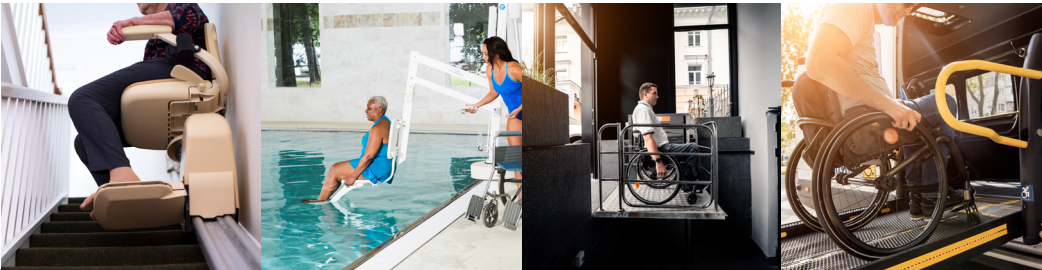


We also have extensive experience in providing drive solutions for automatic shrink wrapping, packaging automation, pallet and tray shuttles, and sorting machines. Contact your local sales engineer today to discuss your requirements.

Recommended solutions

# Mobility solutions

It's a fact of life that advances in healthcare mean people are now living longer and, as we age, we become more reliant on mobility products to support independent living. With a greater demand for mobility solutions, the competition between manufacturers of applications within this fast-paced market has never been higher. The modular range enables greater flexibility within the design stage of your project and ultimately leads to a shortened time to proof-of-concept, giving you the competitive advantage.

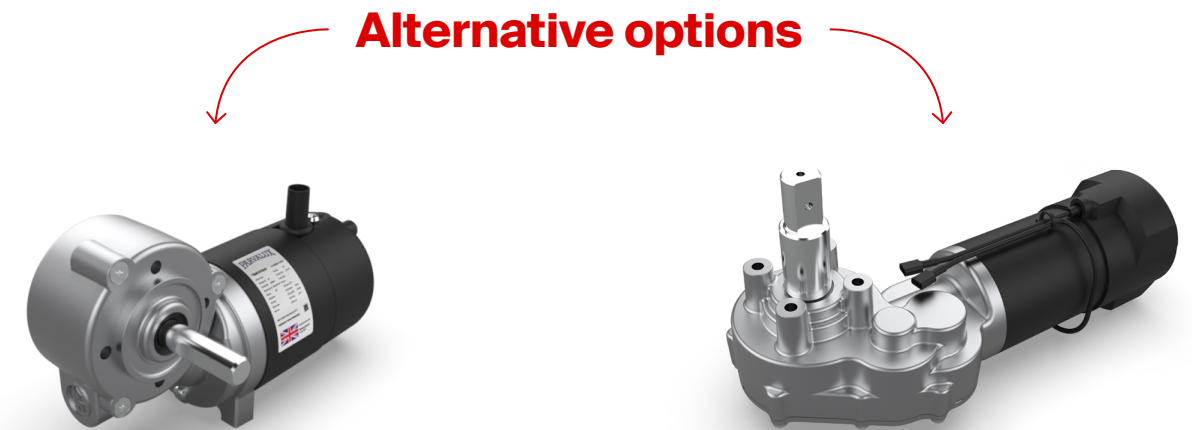


| Modular solution | Max. power (W) | Max. speed (rpm) | Max. torque (Nm) | Stairlifts | Patient hoists | Platform lifts | Wheelchair lifts | Page # |
|------------------|----------------|------------------|------------------|------------|----------------|----------------|------------------|--------|
| → BRx63-GB28     | 85             | 200              | 8.0              |            | ✓              |                |                  | 90     |
| → PBL60-GB28     | 157            | 200              | 8.0              |            | ✓              |                |                  | 91     |
| → BRx52-GB80     | 69             | 200              | 10.0             |            | ✓              |                |                  | 93     |
| → BRx63-GB80     | 157            | 200              | 13.0             |            | ✓              |                |                  | 94     |
| → PBL60-GB80     | 157            | 200              | 13.0             |            | ✓              |                |                  | 95     |
| → PBL70-GB80     | 415            | 300              | 46.2             |            | ✓              |                |                  | 96     |
| → BRx70-GB12     | 157            | 200              | 26.4             | ✓          | ✓              | ✓              | ✓                | 100    |
| → PBL70-GB12     | 415            | 300              | 46.2             | ✓          | ✓              |                | ✓                | 101    |
| → BRx90-GB12     | 283            | 200              | 45.0             | ✓          | ✓              | ✓              | ✓                | 102    |
| → PBL86-GB12     | 586            | 267              | 48.0             | ✓          |                |                | ✓                | 103    |
| → BRx90-GB9      | 283            | 200              | 58.5             | ✓          |                | ✓              | ✓                | 107    |
| → PBL86-GB9      | 586            | 267              | 80.0             | ✓          |                |                | ✓                | 108    |
| → BRx90-GB65     | 283            | 150              | 108.0            | ✓          |                | ✓              | ✓                | 111    |
| → PBL86-GB65     | 586            | 200              | 176.4            | ✓          |                |                | ✓                | 112    |



We also have extensive experience in providing drive solutions for mobility scooters, vehicle access and powered wheelchairs. Contact your local sales engineer today to discuss your requirements.

# Your next steps...



## Start building

If you're ready to start building your modular solution visit [parvalux.com/modular-range](https://parvalux.com/modular-range) or scan the QR code to the right.

Here, you can choose to start your modular build from a motor, gearbox, or motor-gearbox combination, or select one of our recommended combinations for specific applications.

This will take you to our online configurator where you can add accessories and order your build in quantities of up to 10 pieces, all on a 72-hour turnaround!



## Standard range

If you can't find anything within the modular range that meets your requirements, we have an extensive range of standard motors and gearboxes that can be found within our product range catalogue.

Visit [parvalux.com/catalogues](https://parvalux.com/catalogues) to explore the range

## Custom solutions

Our expert team of design engineers are well-versed in modifying our standard range to suit or can even create a complete custom solution from scratch.

Visit [parvalux.com/custom-drive-solutions](https://parvalux.com/custom-drive-solutions) to take a look at some of our previous creations



If you require any further information about the modular range, standard products, or the custom drive solutions we offer, our expert team of sales engineers are on-hand to answer any questions you may have. Find your local sales engineer on the next page and get in touch to discuss your requirements.

# Contact

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## America

|                                                                                     |                                                                                                       |
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|    | <b>Brazil</b><br>Treffer Ltda. (maxon sales agent)<br>motores@treffer.com.br // +55 31 3378 6222      |
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<sup>1</sup> Kwapil & Co GmbH also offer sales support to Hungary, Slovenia, Romania, Croatia, Serbia, and Bulgaria

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