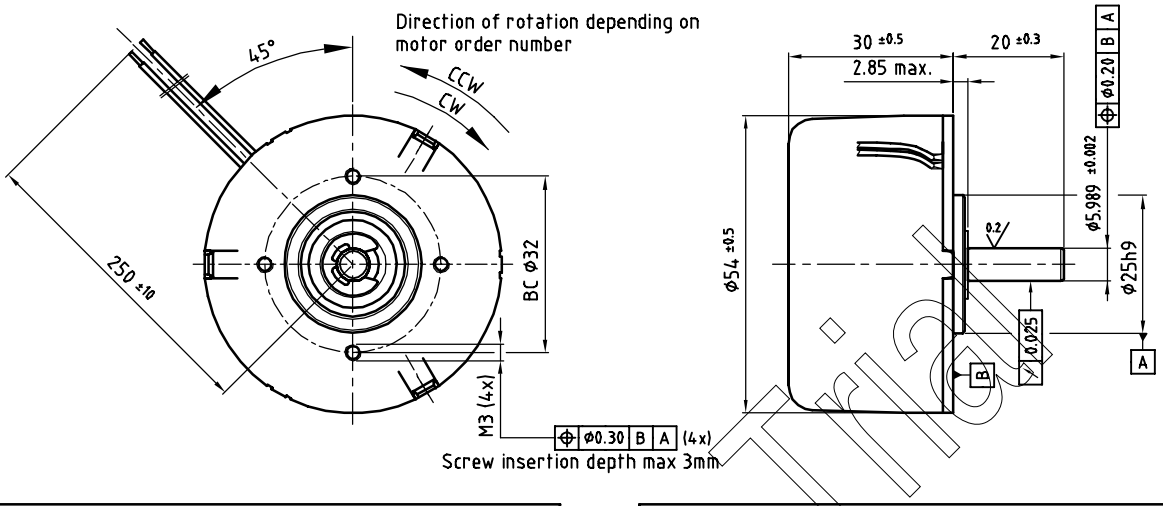
BL48 EB 2 wire Brushless DC motor 8 Watt

Dimensional drawing



Motor data

Motor order number			48005	48015
	CW	4322 016 +	48001	48011
	CCW	4322 016 +		
Nominal voltage		[V]	12	24
Voltage range		[V]	10 .. 15	14 .. 28
Max. output power	1)	[W]	8	8
No load speed		[rpm]	4550	4550
No load current		[mA]	205	125
Min. starting torque		[mNm]	35	38
Nominal torque		[mNm]	22	22
Nominal speed		[rpm]	3000	3000
Nominal current		[A]	0.98	0.50
Max. current limit		[A]	1.47	0.74
Max. continuous torque	1)	[mNm]	30	30
Torque constant		[mNm/A]	27.1	54.9
Rotor inertia		[kgm^2]	$22x10^{-6}$	$22x10^{-6}$
Mechanical time constant		[ms]	65	45
Max. flange temperature	1)	[°C]	85	85

All relevant values in above table are valid for nominal supply voltages and Tamb.=22°C

1) For thermal reasons it is advised to mount the motor on a heat conducting frame if high output power is desired.

Maximum radial load 15 mm from mounting front at 3000 rpm	[N]	40
Mass of motor	[g]	195

Electrical Connection

Lead colour	Function	Description
red	supply voltage	AWG 24
blue	ground	AWG 24

Product combinations

* Gearbox P42A
* Gearbox S64A
* Gearbox S69A

Options

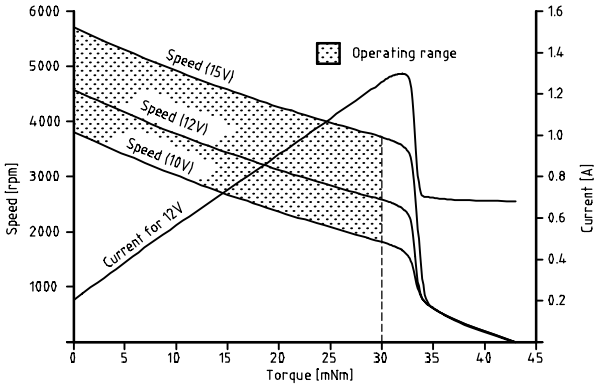
* Special shafts, diameter 3...6 mm
* 4-wire versions with an extra lead for Frequency Generator output and a lead for speed adjustment (PWM control of motor voltage)
* Direction of rotation pre-set (internal)
* Square foot mounting flange

Features

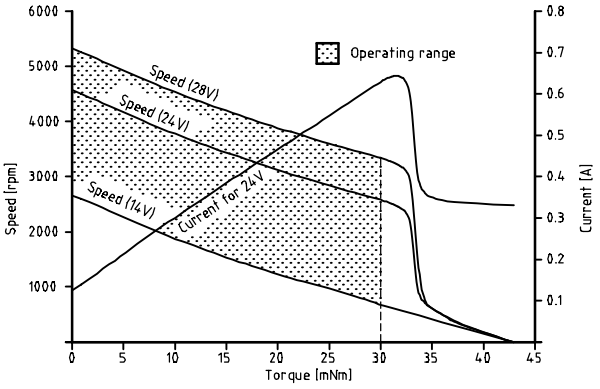
* 2 wire concept
* Long life (up to 20.000 hours)
* EMC compliance with standards EN 55011, EN 55022 and EN 50082-1 2)
* Resistant against short-term wrong connection
* Protection class IP30

2) Capacitor of 1000 µF (for 12 V motor) or 470 µF (for 24 V motor) needed at the outlet of the power supply.

Performance curves of 12 V versions

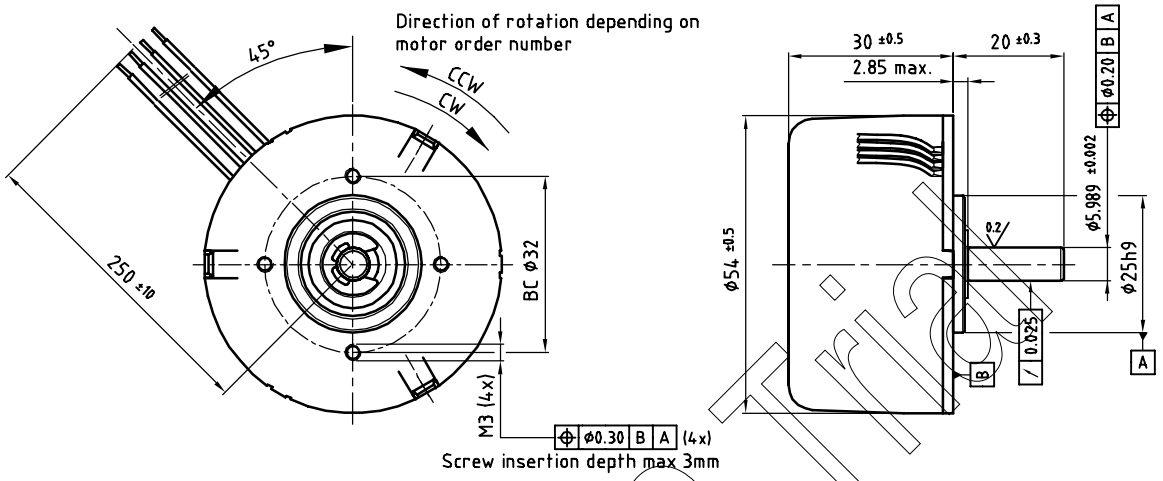


Performance curves of 24 V versions



BL48 EB 4 wire Brushless DC motor 8 Watt

Dimensional drawing



Motor data

Motor order number			48007	48017
	CW	4322 016 +		
	CCW	4322 016 +	48003	48013
Nominal voltage		[V]	12	24
Voltage range		[V]	10 .. 15	14 .. 28
Max. output power	1)	[W]	8	8
No load speed	2)	[rpm]	4550	4550
No load current	2)	[mA]	205	125
Min. starting torque	2)	[mNm]	35	38
Nominal torque	2)	[mNm]	22	22
Nominal speed	2)	[rpm]	3000	3000
Nominal current	2)	[A]	0.98	0.50
Max. current limit		[A]	1.47	0.74
Max. continuous torque	1)	[mNm]	30	30
Min. adjustable speed		[rpm]	200	200
Rotor inertia		[kgm ^{2}]	22x10 $^{-6}$	22x10 $^{-6}$
Mechanical time constant		[ms]	65	45
Max. flange temperature	1)	[°C]	85	85

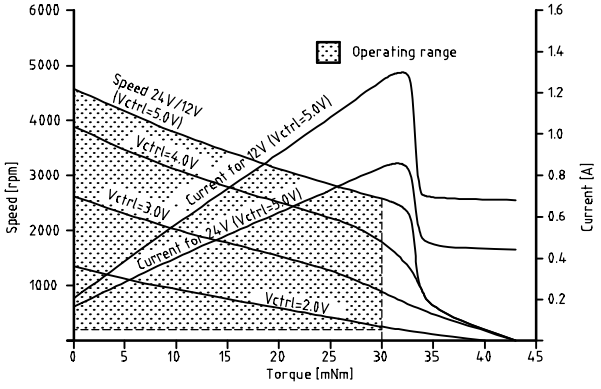
All relevant values in above table are valid for nominal supply voltages and Tamb.=22°C

1) For thermal reasons it is advised to mount the motor on a heat conducting frame if high output power is desired.

2) At Vctrl=5.0V

Maximum radial load 15 mm from mounting front at 3000 rpm	[N]	40
Mass of motor	[g]	195

Performance curves



Electrical Connection

Lead colour	Signal name	Function	Size
red	+Vs	+Supply voltage	AWG 24
blue	GND	Ground (0V)	AWG 24
white	Vctrl	Control voltage input	AWG 24
green	FG	Frequency Generator output	AWG 24

Vctrl input data		
Control voltage range	[V]	0---5
Max. input voltage	[V]	±30
Threshold voltage	[V]	1.0±0.2
Speed/Vctrl relation (at no load)	[rpm/V]	typ. 1250
FG output data		
FG pulses per revolution		6
Pulse length 'high'	[ms]	typ. 1.7
Output series resistance	[Ohm]	3k9
Output level 'high' (Iout<0.1mA)	[V]	4.2---5.4
Output level 'low' (Iout<0.1mA)	[V]	<0.5

Product combinations

* Gearbox P42A
* Gearbox S64A
* Gearbox S69A

Options

* Special shafts, diameter 3...6 mm
* Direction of rotation pre-set (internal)
* Square foot mounting flange

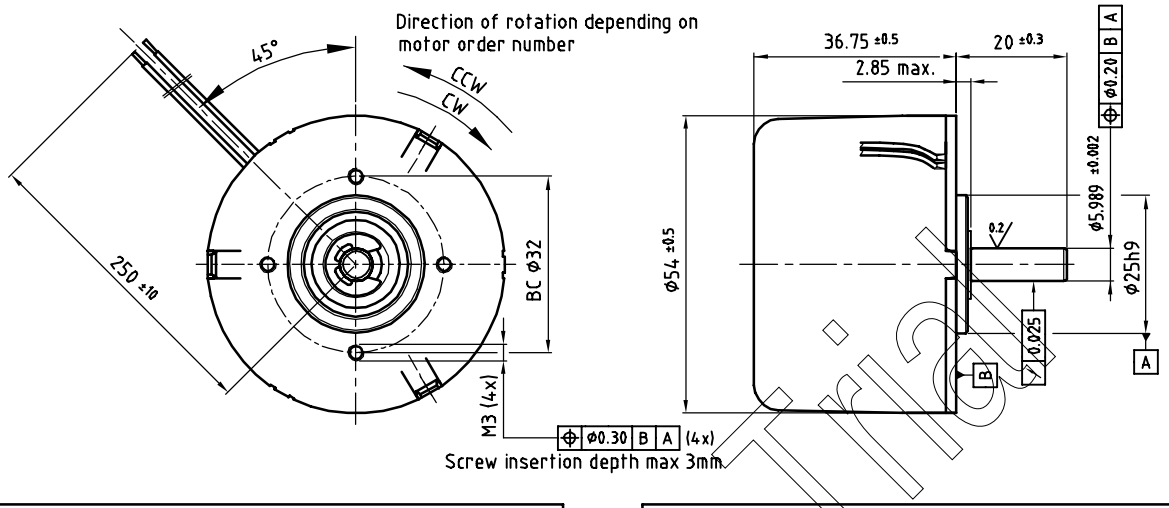
Features

* 4-wire concept with an extra lead for Frequency Generator output and a lead for speed adjustment (PWM control of motor voltage)
* Long life (up to 20.000 hours)
* EMC compliance with standards EN 55011, EN 55022 and EN 50082-1 3)
* Resistant against short-term wrong supply connection
* Input and output signals protected against wrong connection
* Protection class IP30

3) Capacitor of 1000 µF (for 12 V motor) or 470 µF (for 24 V motor) needed at the outlet of the power supply.

BL48 EB 2 wire Brushless DC motor 12 Watt

Dimensional drawing



Motor data

Motor order number			48025	48035
	CW	4322 016 +		
	CCW	4322 016 +	48021	48031
Nominal voltage		[V]	12	24
Voltage range		[V]	10 .. 15	14 .. 28
Max. output power	1)	[W]	12	12
No load speed		[rpm]	4600	4600
No load current		[mA]	230	140
Min. starting torque		[mNm]	53	57
Nominal torque		[mNm]	30	30
Nominal speed		[rpm]	3200	3200
Nominal current		[A]	1.28	0.66
Max. current limit		[A]	2.13	1.04
Max. continuous torque	1)	[mNm]	43	43
Torque constant		[mNm/A]	27.6	56.2
Rotor inertia		[kgm^2]	31x10^{-6}	31x10^{-6}
Mechanical time constant		[ms]	51	41
Max. flange temperature	1)	[°C]	85	85

All relevant values in above table are valid for nominal supply voltages and Tamb.=22°C

1) For thermal reasons it is advised to mount the motor on a heat conducting frame if high output power is desired.

Maximum radial load 15 mm from mounting front at 3000 rpm	[N]	40
Mass of motor	[g]	250

Electrical Connection

Lead colour	Function	Description
red	supply voltage	AWG 24
blue	ground	AWG 24

Product combinations

* Gearbox P42A
* Gearbox S64A
* Gearbox S69A

Options

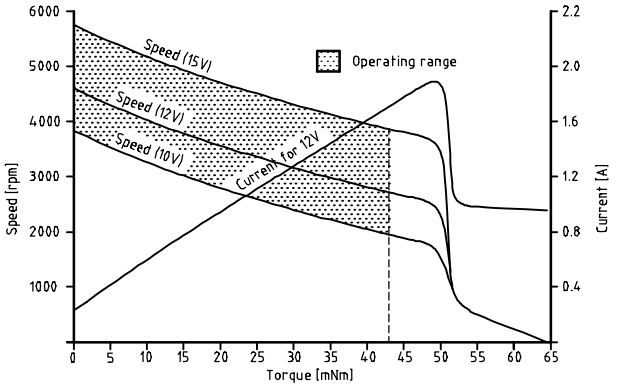
* Special shafts, diameter 3...6 mm
* 4-wire versions with an extra lead for Frequency Generator output and a lead for speed adjustment (PWM control of motor voltage)
* Direction of rotation pre-set (internal)
* Square foot mounting flange

Features

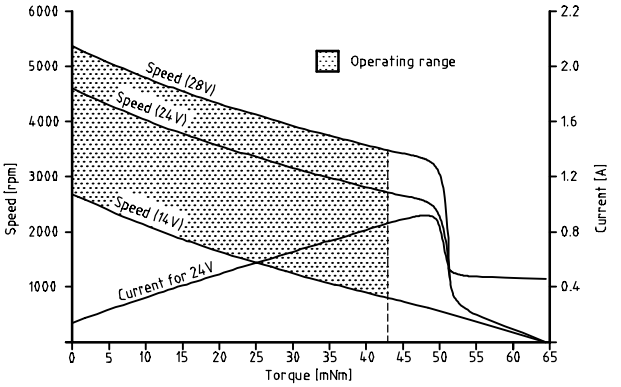
* 2 wire concept
* Long life (up to 20.000 hours)
* EMC compliance with standards EN 55011, EN 55022 and EN 50082-1 2)
* Resistant against short-term wrong connection
* Protection class IP30

2) Capacitor of 1000 µF (for 12 V motor) or 470 µF (for 24 V motor) needed at the outlet of the power supply.

Performance curves of 12 V versions

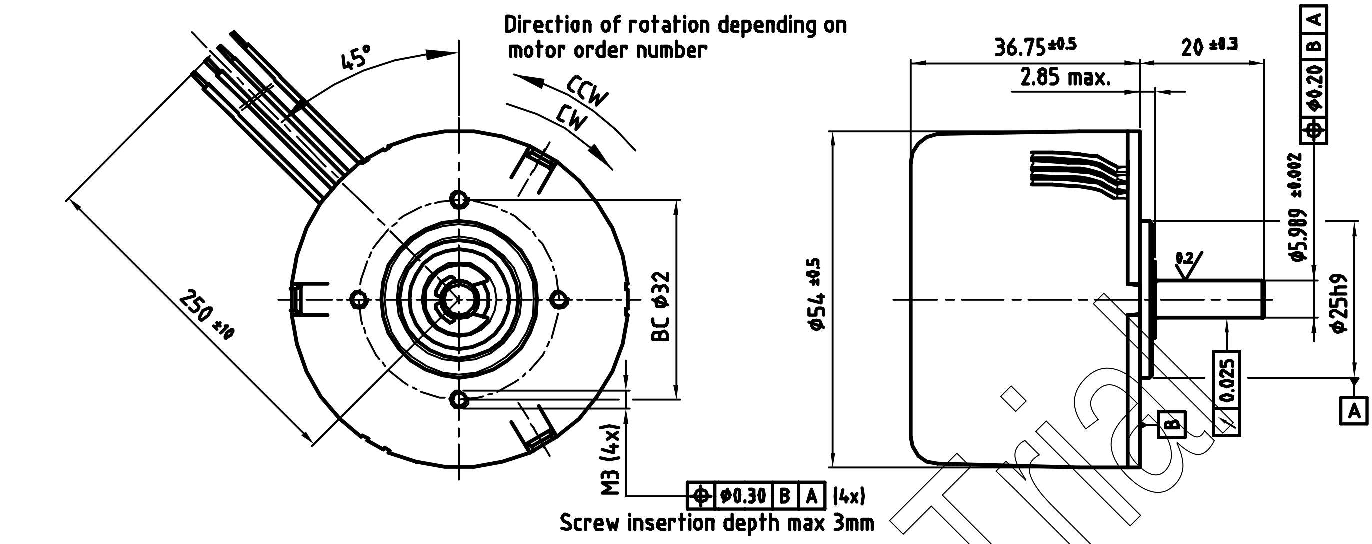


Performance curves of 24 V versions



BL48 EB 4 wire Brushless DC motor 12 Watt

Dimensional drawing



Motor data

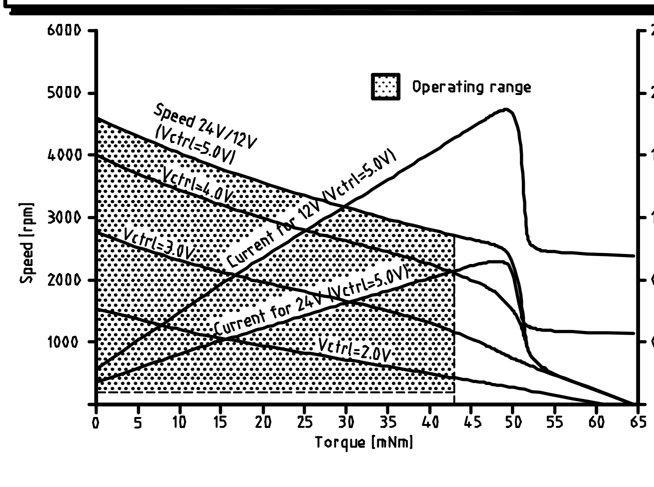
Motor order number	CW	4322 016 +	48027	48037
	CCW	4322 016 +	48023	48033
Nominal voltage		[V]	12	24
Voltage range		[V]	10 .. 15	14 .. 28
Max. output power [1]		[W]	12	12
No load speed [2]		[rpm]	4600	4600
No load current [2]		[mA]	230	140
Min. starting torque [2]		[mNm]	53	57
Nominal torque [2]		[mNm]	30	30
Nominal speed [2]		[rpm]	3200	3200
Nominal current [2]		[A]	1.28	0.66
Max. current limit		[A]	2.13	1.04
Max. continuous torque [1]		[mNm]	43	43
Min. adjustable speed		[rpm]	200	200
Rotor inertia		[kgm^2]	$31x10^{-6}$	$31x10^{-6}$
Mechanical time constant		[ms]	51	41
Max. flange temperature [1]		[°C]	85	85

All relevant values in above table are valid for nominal supply voltages and Tamb.=22°C

[1] For thermal reasons it is advised to mount the motor on a heat conducting frame if high output power is desired.
[2] At Vctrl=5.0V

Maximum radial load 15 mm from mounting front at 3000 rpm	[N]	40
Mass of motor	[g]	250

Performance curves



Electrical Connection

Lead colour	Signal name	Function	Size
red	+Vs	+Supply voltage	AWG 24
blue	GND	Ground (0V)	AWG 24
white	Vctrl	Control voltage input	AWG 24
green	FG	Frequency Generator output	AWG 24

Vctrl input data		
Control voltage range	[V]	0---5
Max. input voltage	[V]	±30
Threshold voltage	[V]	1.0±0.2
Speed/Vctrl relation (at no load)	[rpm/V]	typ. 1250
FG output data		
FG pulses per revolution		6
Pulse length 'high'	[ms]	typ. 1.7
Output series resistance	[Ohm]	3k9
Output level 'high' (Iout<0.1mA)	[V]	4.2---5.4
Output level 'low' (Iout<0.1mA)	[V]	<0.5

Product combinations

* Gearbox P42A
* Gearbox S64A
* Gearbox S69A

Options

* Special shafts, diameter 3...6 mm
* Direction of rotation pre-set (internal)
* Square foot mounting flange

Features

* 4-wire concept with an extra lead for Frequency Generator output and a lead for speed adjustment (PWM control of motor voltage)
* Long life (up to 20.000 hours)
* EMC compliance with standards EN 55011, EN 55022 and EN 50082-1 [3]
* Resistant against short-term wrong supply connection
* Input and output signals protected against wrong connection
* Protection class IP30

[3] Capacitor of 1000 µF (for 12 V motor) or 470 µF (for 24 V motor) needed at the outlet of the power supply.