

BL 48 EB Brushless DC motor 2-Wire

8 Watt



Features:

- Long life (20.000 hours)
- Electronics on board
- 2-wire concept
- Protected against wrong connection

Options:

- Direction of rotation pre-set internal)
- Square foot mounting flange
- 4-wire version with an extra lead for Frequency Generator output & a lead for speed adjustment (PWM control of motor voltage)
- Special shafts, diameter 3...6mm
- Gearbox P42A, S64A or S69A



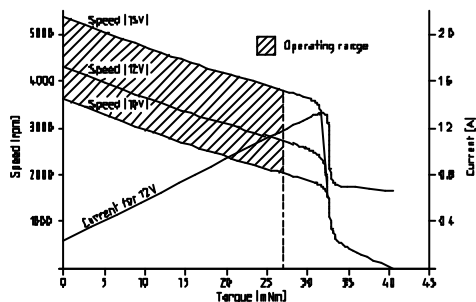
Motor data

Motor order number	CW	4322 016 8005	4322 0164 8015	V
	CCW	4322 016 8001	4322 0164 8011	
Nominal voltage		12	24	V
Voltage range		10...15	14...28	V
Max. output power)	8	8	W
No load speed		4300	4300	rpm
No load current		210	130	mA
Min. starting torque		32	34	mNm
Nominal torque		22	22	mNm
Nominal speed		2900	3000	rpm
Nominal current		1.01	0.51	A
Max. current limit		1.4	0.7	A
Max.continuous torque)	27	28	mNm
Torque constant		28	56	mNm/A
Rotor inertia		22x10 ⁻⁶	22x10 ⁻⁶	kgm ²
Mechanical time constant		48	48	ms
Max. flange temperature)	85	85	°C
Maximum radial load 15 mm from mounting front at 3000 rpm		40	40	N
Mass of motor		200	200	grams

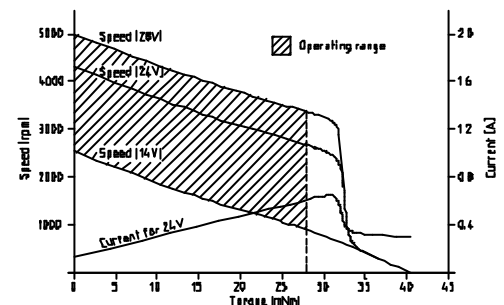
All relevant values in above table are valid for nominal supply voltages and $t_{amb} = 22^{\circ}C$

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

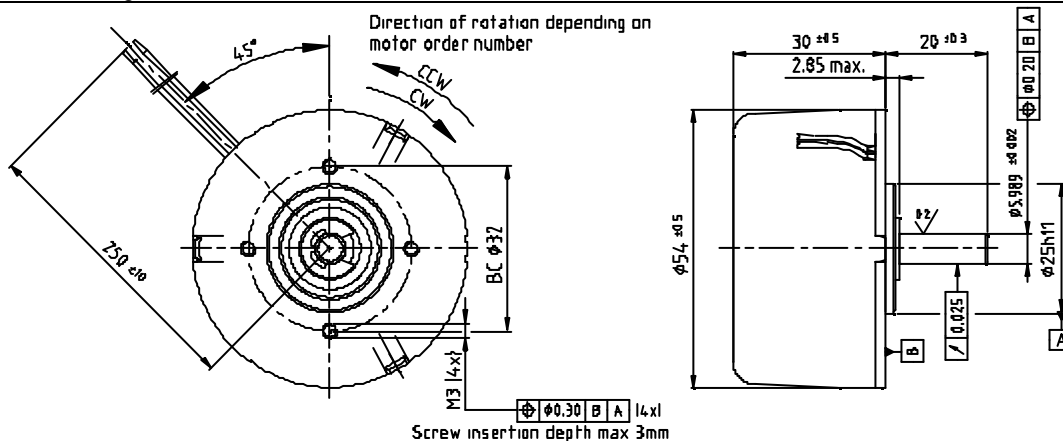
Performance curve of 12 V versions



Performance curve of 24 V versions



Dimensional drawing



BL 48 EB Brushless DC motor 4-Wire

8 Watt

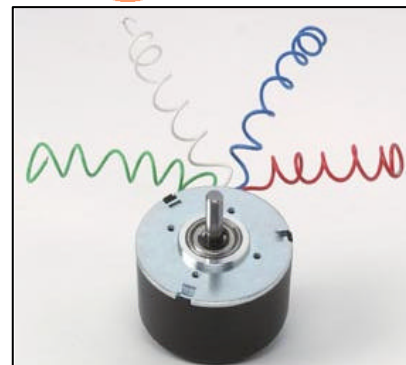


Features:

- Long life (20.000 hours)
- Electronics on board
- 4-wire concept
- Protected against wrong connection

Options:

- Direction of rotation pre-set (internal)
- Square foot mounting flange
- 2-wire version with an extra lead for Frequency Generator output & a lead for speed adjustment
- (PWM control of motor voltage)
- Special shafts, diameter 3...6mm
- Gearbox P42A, S64A or S69A



Motor data

Motor order number	4322 0164 8007	4322 0164 8017	CW
	4322 0164 8003	4322 0164 8013	CCW
Nominal voltage	12	24	V
Voltage range	10...15	14...28	V
Max. output power	1) 8	8	W
No load speed	2) 4300	4300	rpm
No load current	2) 210	130	mA
Min. starting torque	2) 32	34	mNm
Nominal torque	2) 22	22	mNm
Nominal speed	2) 2900	3000	rpm
Nominal current	2) 1.01	0.51	A
Max. current limit	1.4	0.7	A
Max.continuous torque	1) 27	28	mNm
Min. adjustable speed	200	200	rpm
Torque constant	28	56	mNm/A
Rotor inertia	22x10 ⁻⁶	22x10 ⁻⁶	kgm ²
Mechanical time constant	48	48	ms
Max. flange temperature	1) 85	85	°C
Maximum radial load 15 mm from mounting front at 3000 rpm	40	40	N
Mass of motor	200	200	grams

All relevant values in above table are valid for nominal supply voltages and $t_{amb} = 22^{\circ}C$

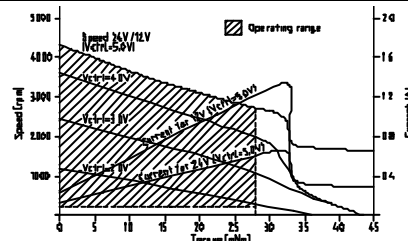
1) For thermal reasons it is advised to mount the motor on a heat conducting frame if high output is desired.

2) At $V_{ctr} = 5.0V$

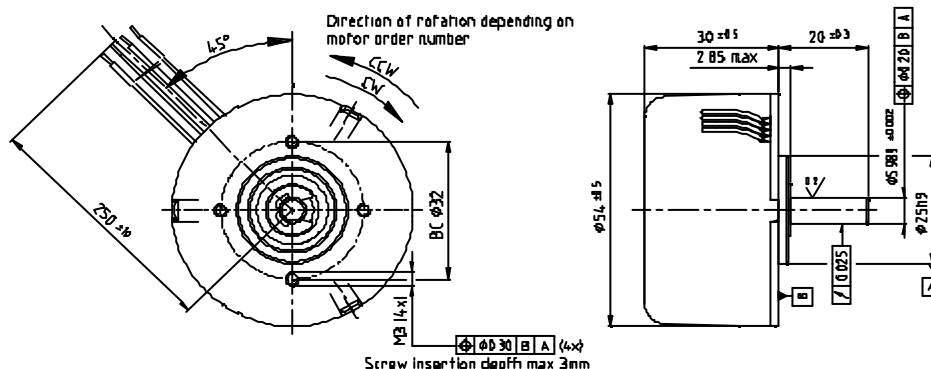
Electrical connection

Lead color	Signal name	Function	Size
Red	+Vs	+ Supply voltage	AWG 24
Blue	GND	Ground	AWG 24
White	Vctrl	Control voltage input	AWG 24
Green	FG	Frequency generator	AWG 24

Performance curve



Dimensional drawing



BL 48 EB Brushless DC motor 2-Wire

12 Watt



Features:

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

Options:

- Special shafts, \varnothing 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 preset
- Square foot mounting flange

Product combinations:

- Gearbox P42A
- Gearbox S64A
- Gearbox S69A



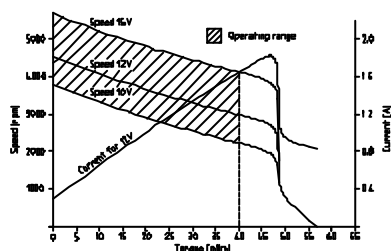
Motor data

Motor order number	4322 0164 8025	4322 0164 8035	CW
	4322 0164 8021	4322 0164 8031	CCW
Nominal voltage	12	24	V
Voltage range	10-15	14-28	V
Max. output power	12	12	W
No load speed	4550	4550	rpm
No load current	270	170	mA
Min. starting torque	52	52	mNm
Nominal torque	30	30	mNm
Nominal speed	3200	3200	rpm
Nominal current	1.33	0.69	A
Max. current limit	1.95	0.95	A
Max continuous torque	40	40	mNm
Torque constant	30	61	mNm/A
Rotor inertia	30×10^{-5}	30×10^{-5}	kgm ²
Mechanical time constant	74	74	Ms
Max. flange temperature	85	85	°C
Maximum radial load	40	40	N
Mass of motor	200	200	grams

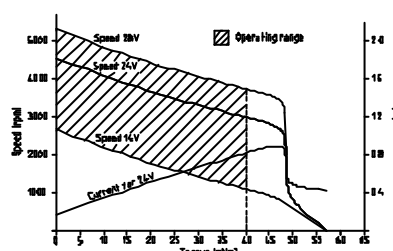
All relevant values in above table are valid for nominal supply voltages and Tamb. = 22°C

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

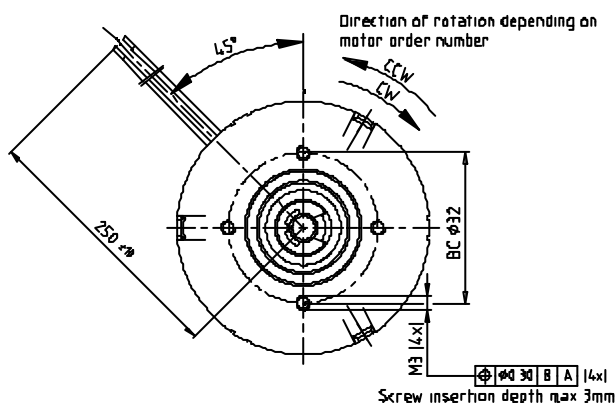
Performance curve 12V



Performance curve 24V



Dimensional Drawing



BL 48 EB Brushless DC motor 4-Wire

12 Watt



Features:

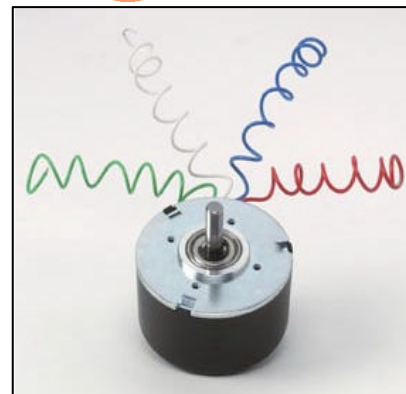
- 4-wire concept with an extra lead For Frequency Generator output and a lead for speed adjustment
- (PWM control of motor voltage)
- Long life (up to 20.000 hours)
- EMC compliance with standards EN 55011, EN 55022 and EN 50082-1³⁾
- Protected against wrong connection
- Protection class IP30

Options:

- Special shafts, diameter 3-6 mm
- Direction of rotation preset internal
- Squarefoot mounting flange

Product combinations:

- Gearbox P42A
- Gearbox S64A
- Gearbox S69A



Motor data

Motor order number	4322	4322	CW
	01648027	01648037	
	4322	4322	CCW
	01648023	01648033	
Nominal voltage	12	24	V
Voltage range	10-15	14-28	V
Max. output power ¹⁾	12	12	W
No load speed ²⁾	4550	4550	rpm
No load current ²⁾	270	170	mA
Min. starting torque ²⁾	52	52	mNm
Nominal torque	30	30	mNm
Nominal speed	3200	3200	rpm
Nominal current ²⁾	1.33	0.69	A
Max. current limit	1.95	0.95	A
Max continuous torque ¹⁾	40	40	mNm
Min. adjustable speed	200	200	rpm
Rotor inertia	30x10 ⁻⁶	30x10 ⁻⁶	kgm ²
Mechanical time constant	74	74	Ms
Max. flange temperature ¹⁾	85	85	°C

Electrical connection

Lead color	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

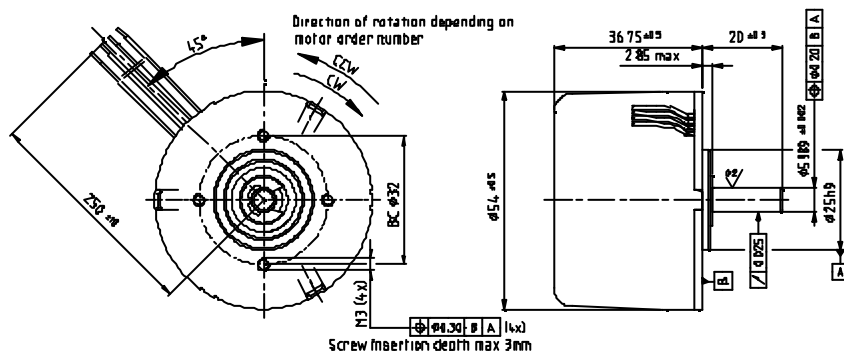
Vctrl input data		
Voltage range	0-5	V
Max. input voltage	12	V
Threshold voltage	Approx. 1.0	V
Speed/ Vctrl relation at no load	Approx. 1200	rpm/ V
FG output data		
FG pulses per revolution	6	
Pulse length 'high'	Approx. 2.1	ms
Output series resistance	3k9	Ω
Output level 'high' (out < 0.1mA)	4.2-5.4	V
Output level 'low' (out < 0.1mA)	< 0.5	V

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 = 5.0 V

Dimensional Drawing



Performance curve

