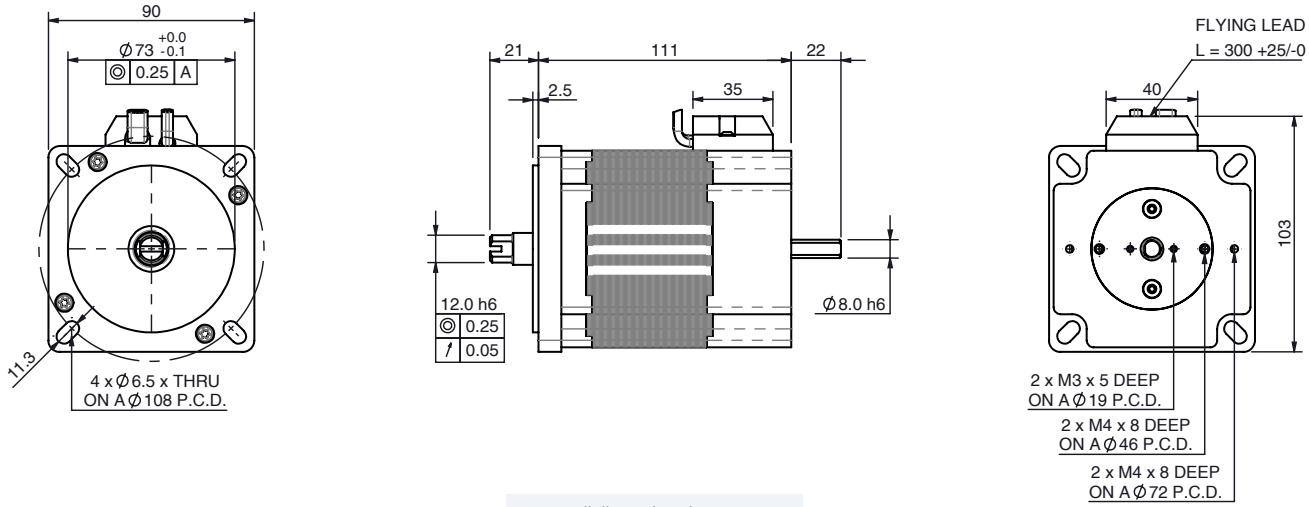
PBL86-55 BLDC motor

Ø86 mm frame // 55 mm stack

parvalux by maxon



all dimensions in mm

Part number key	
Modular	######
Standard	######
Calculated data	######

	Technical data		
1	Part number		776624
2	Nominal power	W	419
3	Nominal voltage	V	48
4	No load speed	rpm	4342
5	No load current	A	1.2
6	Nominal speed	rpm	4000
7	Nominal continuous torque (S1)	Nm	1.0
8	Nominal continuous current (S1)	A	10.3
9	Max Intermittent torque (S2 - 15 minutes)	Nm	1.75
10	Stall current	A	93
11	Stall torque	Nm	10.1
12	Stack length	mm	55
13	Maximum efficiency	%	85
14	Ra	Ω	0.087
15	Rl	mH	0.23
16	Speed constant	rpm/V	90.8
17	Torque constant	Nm/A	0.11
18	Speed torque gradient	rpm/Nm	439.5
19	Rotor inertia	Kgm^2	2.04×10^{-4}
20	Weight	Kg	3.20

	Thermal data		
21	Ambient temperature	°C	40

	Mechanical data		
22	Radial load [distance from flange]	N [mm]	350 [15]
23	Radial play	mm [@g]	0.06 [450]
24	Axial end play	mm [@g]	0.08 [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

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

Compatible products

Gearbox	Page #
PGx70	250
GB12	68
GB9	70
GB65	71

Brake	Page #
1.5 Nm	80
2.0 Nm	259
4.0 Nm	260
Power-On	261

Controller	Page #
SC 50/15	82
EPOS	265
ESCON	274

Encoder	Page #
Incr. 5-pin	78
Incr. 10-pin	78
Diff. 10-pin	79
Magnetic	256

Key
Standard combination
Modular combination

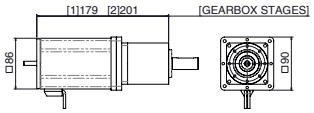
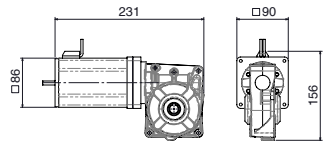
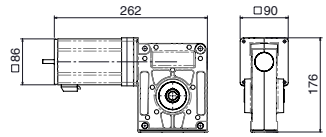
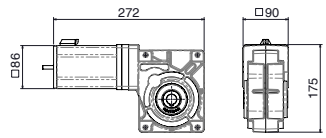
sales@parvalux.com +44(0)1202 512575 www.parvalux.com

additional information available on request

PBL86-55 combinations

Quickview - combination drawing and technical data

parvalux by maxon

	Combination drawing	Technical data							
PBL86-55-PGx70		Gear material [1]		Comp.	Comp.	Comp.	Steel	Steel	Steel
		Gear ratio [stages] [2]	:1	-	-	-	3.9 [1]	21 [2]	44 [2]
		Speed	rpm	-	-	-	1026	190	91
		Nominal torque	Nm	-	-	-	3.7	19.3	30.0
		Intermittent torque	Nm	-	-	-	6.5	33.8	37.5
PBL86-55-GB12		Gear material [1]		Comp.	Comp.	Comp.	Bronze	Bronze	Bronze
		Gear ratio [2]	:1	15	30	60	15	30	60
		Speed	rpm	267	133	67	267	133	67
		Nominal torque	Nm	12.5	20.0	20.0	11.3	19.5	30.0
		Intermittent torque	Nm	21.8	32.0	32.0	19.7	34.1	48.0
PBL86-55-GB9		Gear material [1]		Comp.	Comp.	Comp.	Bronze	Bronze	Bronze
		Gear ratio [stages] [2]	:1	15	30	60	15	30	60
		Speed	rpm	267	133	67	267	133	67
		Nominal torque	Nm	12.8	22.5	39.0	12.0	21.0	33.0
		Intermittent torque	Nm	22.3	39.4	68.3	21.0	36.8	57.8
PBL86-55-GB65		Gear material [1]		Bronze	Bronze	Bronze	Bronze	Bronze	-
		Gear ratio [2]	:1	20	40	80	120	160	-
		Speed	rpm	200	100	50	33	25	-
		Nominal torque	Nm	16.2	30.4	56.0	72.0	68.8	-
		Intermittent torque	Nm	28.4	53.2	98.0	126.0	120.4	-

Key
Standard combination / standard gear ratio
Modular combination / modular gear ratio

Notes

[1] Comp. = Composite gears

[2] Full gear ratio options displayed on individual gearbox datasheets

→ 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.