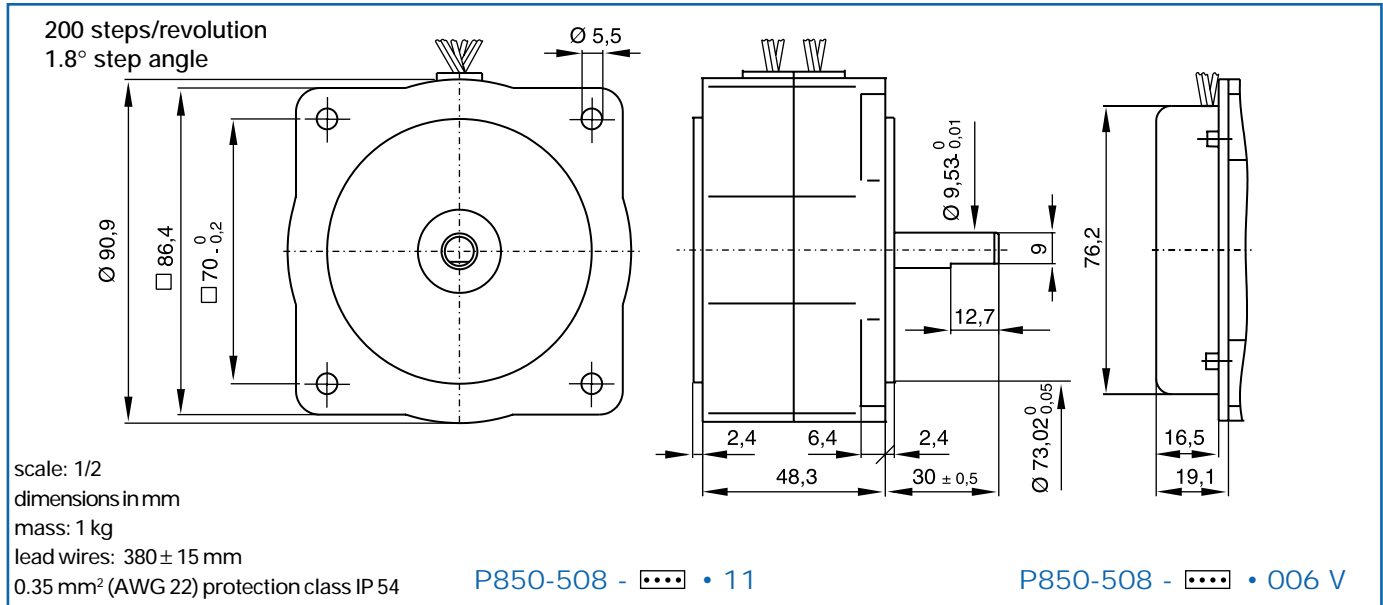


Suitable for microstep operation

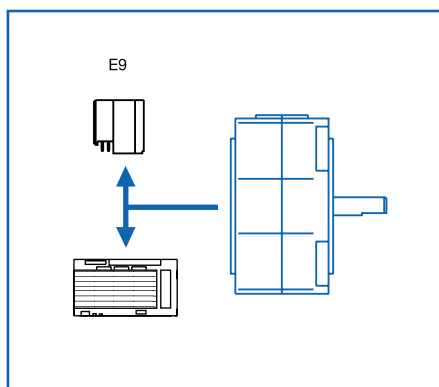


Windings available

	[dots]	C		B	
		coils in series	coils in parallel	coils in series	coils in parallel
Coil dependent parameters		typ	typ	typ	typ
1 Phase resistance	ohm	2.6	0.65	1.6	0.4
2 Phase inductance (1 kHz)	mH	6.4	1.6	4	1
3 Nominal phase current (2 ph. on)	A	1.8	3.6	2.3	4.6
4 Nominal phase current (1 ph. on)	A	2.5	5	3.2	6.4
5 Back-EMF amplitude	V/kst/s	9.6	4.8	7.6	3.8

Coil independent parameters ¹⁾

Torque parameters		min	typ	max
6 Holding torque (nominal current)	mNm (oz-in)	670 (94.9)	780 (110.4)	880 (124.6)
7 Holding torque (2 x nominal current) ²⁾	mNm (oz-in)	1130 (160)	1340 (189.7)	1550 (219.5)
8 Detent torque amplitude and friction	mNm (oz-in)	3.5 (0.5)	28 (3.9)	43 (6.1)
Thermal parameters			2.6	
9 Thermal resistance coil-ambient ³⁾	°C/W			
Angular accuracy				
10 Absolute (2 ph. on full-step mode/microstep)	% full-steps		±3/±6	±5/±8
Mechanical parameters				
11 Rotor inertia	kgm ² · 10 ⁻⁷		150	
Other parameters				
12 Natural resonance frequency (nominal current)	Hz		260	
13 Electrical time constant	ms		3.1	
14 Angular acceleration (nominal current)	rad/s ²		52000	
Velocity sensors ⁶⁾				
15 EMF amplitude	V/kst/s		5.5	
16 Coil resistances	ohm		80	
17 Coil inductance	mH		50	



- Max. rated coil temperature: 155°C
- Recom. ambient temperature range: -20°C to +50°C
- Radial shaft play (20N): 25 µm
- Axial shaft play (30N): 25 µm
- Max. radial load⁴⁾: 44N
- Max. axial load⁵⁾: 66N
- Test voltage (1 min): 500 V_{RMS}
- "Power rate" (nominal current): 86 kW/s

¹⁾ Bipolar driver

²⁾ The maximum coil temperature must be respected

³⁾ Motor mounted to an aluminium plate 20 x 20 x 1.3 cm

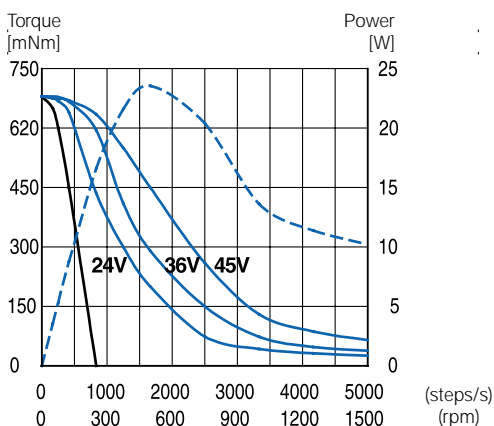
⁴⁾ Load applied at 12 mm from mounting face

⁵⁾ Shaft must be supported for press-fitting a pulley or pinion

⁶⁾ Delivering two sinusoidal signals in quadrature (standard option).

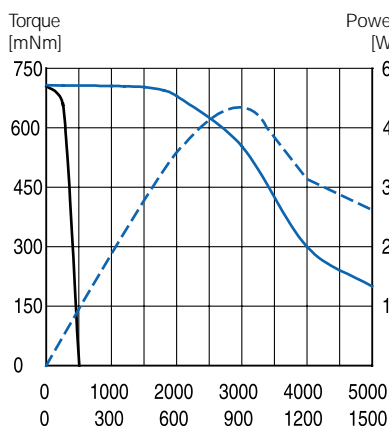
P850-508-C

Coils in series
escap® EDM-453
I = 2.5A



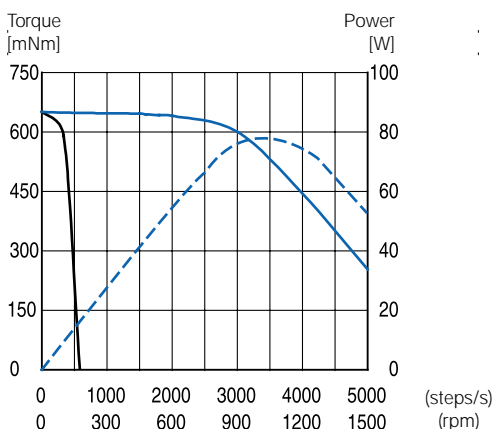
P850-508-C

Coils in parallel
escap® EDM-907
I = 5A, U = 50V



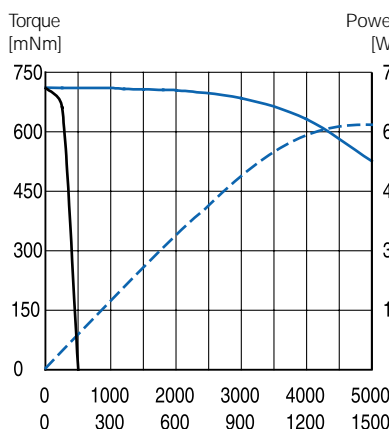
P850-508-B

Coils in parallel
escap® EDM-907,
I = 6.4A, U = 50V



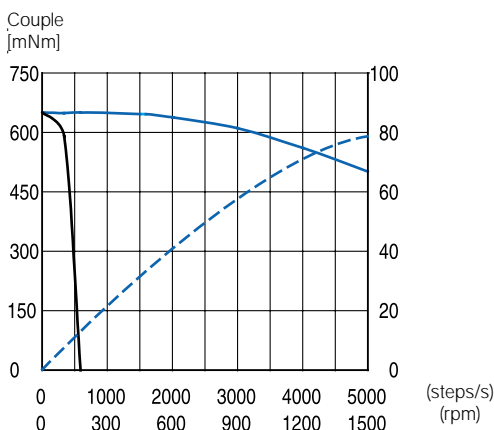
P850-508-C

Coils in parallel
escap® EDM-907,
I = 5A, U = 70V



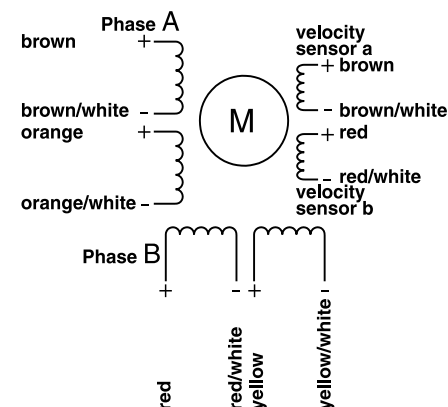
P850-508-B

Coils in parallel
escap® EDM-907,
I = 6.4A, U = 70V



— Pull-in range
— Pull-out range
- - - Power output

Pull-in is measured with a load inertia equal to the rotor inertia.



Motor connections

Executions available from stock :

P850-508-C • 11 see drawing

This motor is also available with the coil B • 11 and encoder E9 or with speed sensors • 006 V

Particular versions include options such as special shafts (hollow shaft) and so forth.

Notes

This motor is designed for microstep operation, it features :

- sinusoidal torque function
- detent torque is very small compared to holding torque
- no magnetic coupling between phases
- excellent linearity current vs torque

The speed scale is indicated in full-steps/s for all drive modes. The motor is driven in half-steps unless otherwise specified.

The motor is energised with nominal current unless otherwise specified.

Use of the velocity sensors and adequate drive circuitry allow for damping of the end-of-step ringing. Total move time is thus reduced when positioning a load having low friction content.

The following escap® drive circuits are recommended with the P850 motor, depending on the drive mode and the dynamic performance required : EDM-453, EDM-907.

Availability: see enclosed document at the end of the catalogue

Specifications subject to change without prior notice