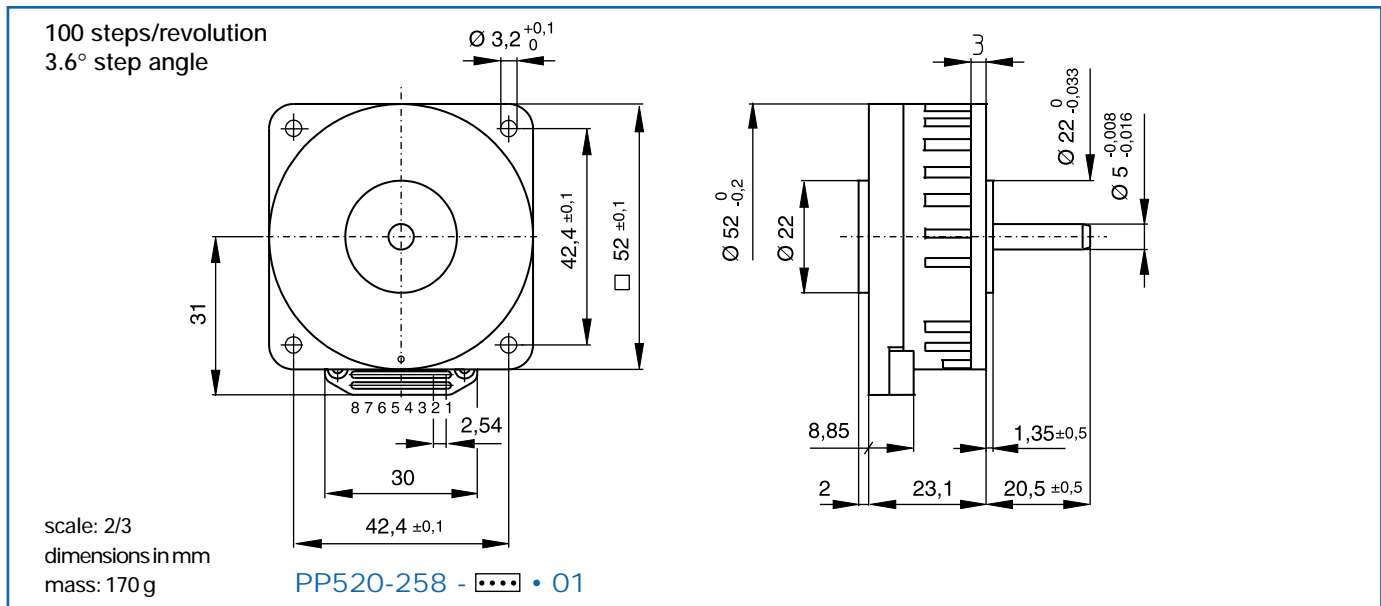


With integrated position sensors



Windings available



013

004

0.7

Coil dependent parameters

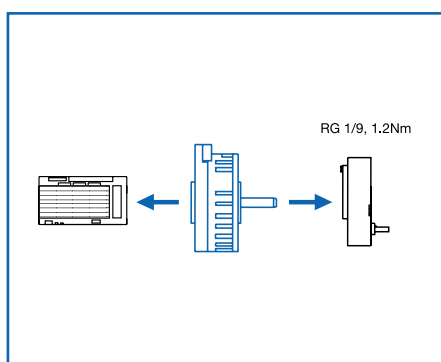
		typ	typ	typ	
1	Phase resistance	ohm	13.5	4.4	0.7
2	Phase inductance (1 kHz)	mH	27	8	1.3
3	Nominal phase current (2 ph. on)	A	0.5	0.9	2.3
4	Nominal phase current (1 ph. on)	A	0.75	1.3	3.3
5	Back-EMF amplitude	V/kst/s	9.8	5.5	2.1

Coil independent parameters¹⁾

		min	typ	max	
Torque parameters					
6	Holding torque (nominal current)	mNm (oz-in)	102 (14.4)	120 (17)	140 (19.8)
7	Holding torque (1.5 x nominal current) ²⁾	mNm (oz-in)	175 (24.8)	205 (29)	240 (34)
8	Detent torque amplitude and friction	mNm (oz-in)	4 (0.6)	10 (1.4)	15 (2.1)
Thermal parameters					
9	Thermal resistance coil-ambient ³⁾	°C/W		9.5	
Angular accuracy					
10	Absolute accuracy (2 ph. on full-step mode)	% full-steps		±3	±5
Mechanical parameters					
11	Rotor inertia	kgm ² ·10 ⁻⁷		12	
Other parameters					
12	Natural resonance frequency (nominal current)	Hz		250	
13	Electrical time constant	ms		1.8	
14	Angular acceleration (nominal current)	rad/s ²		100000	

Hall sensor⁶⁾

15	Supply voltage	V	5		24
16	Operating temperature	°C	-40		125
17	Signal periods per revolution ⁷⁾	-		25	
18	Elec. angle between motor ph./hall signal	degrees	35	45	55



- Max. rated coil temperature: 130°C
- Recom. ambient temperature range: -20°C to +50°C
- Radial shaft play (5N): 15 µm
- Axial shaft play (5N): 10 µm
- Max. radial load⁴⁾: 20 N
- Max. axial load⁵⁾: 30 N
- Test voltage (1 min): 500 V_{RMS}
- "Power rate" (nominal current): 12 kW/s

¹⁾ Bipolar driver

²⁾ The maximum coil temperature must be respected

³⁾ Motor unmounted

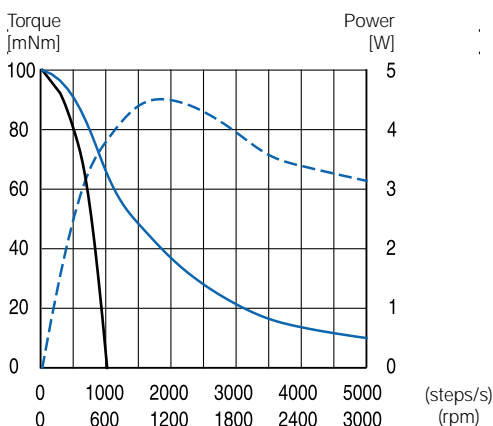
⁴⁾ Load applied at 12 mm from mounting face

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

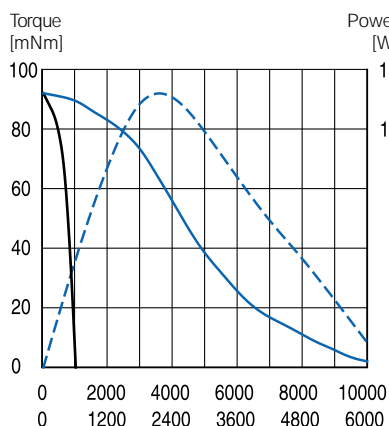
⁶⁾ Two sensors with output signals in quadrature. Open-collector (I_{max} = 10mA)

⁷⁾ When using both signals' edges, a resolution of 100 positions per rev. is obtained

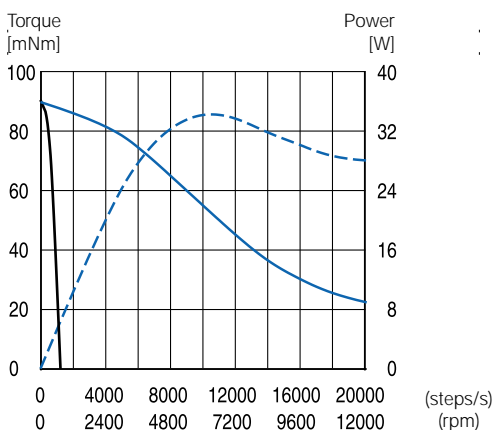
PP520-258-013
Voltage driver type L/R
33Ω in Serie, 36V



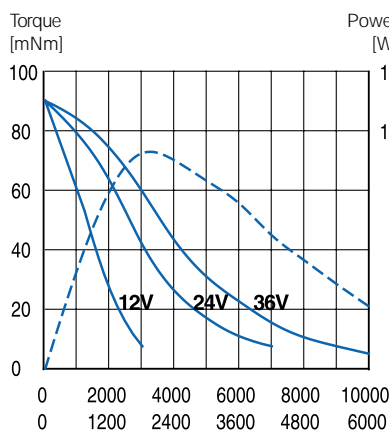
PP520-258-004
escap® ESD-1200,
U = 36V



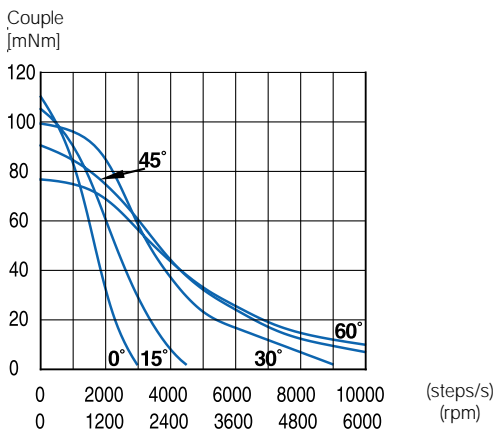
PP520-258-0.7
escap® ESD-1300,
U = 36V



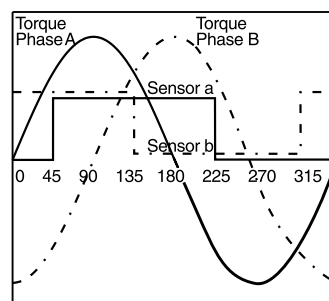
PP520-258-004
Autocommutation mode
Phase advance 45°



PP520-258-004
Autocommutation mode
Parameter phase advance
U = 36V

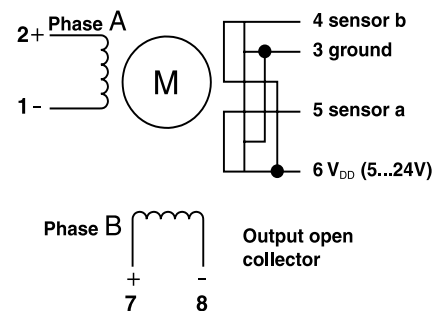


Torque and sensor signals phase shift
in electrical degrees
CW operation.



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

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



Motor connections

Executions available from stock :

- 01 see drawing
- 01 for gearbox [RG1/9](#)

The PP520 motor is also available with the K40 gearbox.

Particular versions include options such as special shafts (hollow shaft), other gearboxes and so on.

Notes

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.

With the integrated Hall sensors, the PP520 motor can operate as a stepper motor with confirmation of step execution. With an adequate drive circuit it can also position, with the automatic commutation assuring full torque usage.

The following drive circuits are recommended with the PP520 motor, depending on the drive mode and the dynamic performance required: ESD-1200/1300, DM224-i.

The DEM 31 and DEM 32 circuits allow to demonstrate the use of the PP520 motor in brushless DC mode.

Availability: see enclosed document at the end of the catalogue

Specifications subject to change without prior notice