

NEW

Brushless DC-Servomotors

14,5 mNm

For combination with
Gearheads:

20/1, 23/1

Encoders:

IE2-1024, 5500, 5540

Drive Electronics:

Speed Controller, Motion Controller

Series 2057 ... BHS

2057 S		024 BHS	
1 Nominal voltage	U_N	24	Volt
2 Terminal resistance, phase-phase	R	1,53	Ω
3 Output power ¹⁾	$P_{2 \text{ max.}}$	61	W
4 Efficiency	$\eta_{\text{max.}}$	85	%
5 No-load speed	n_o	35 800	rpm
6 No-load current (with shaft $\varnothing$ 3,0 mm)	I_o	0,095	A
7 Stall torque	M_H	99	mNm
8 Friction torque, static	C_o	0,28	mNm
9 Friction torque, dynamic	C_v	$9,13 \cdot 10^{-6}$	mNm/rpm
10 Speed constant	k_n	1 501	rpm/V
11 Back-EMF constant	k_E	0,666	mV/rpm
12 Torque constant	k_M	6,36	mNm/A
13 Current constant	k_i	0,157	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	361	rpm/mNm
15 Terminal inductance, phase-phase	L	119	μH
16 Mechanical time constant	τ_m	8	ms
17 Rotor inertia	J	2,04	gcm^2
18 Angular acceleration	$\alpha_{\text{max.}}$	487	10^3rad/s^2
19 Thermal resistance	$R_{\text{th } 1} / R_{\text{th } 2}$	1,4 / 12,8	K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	5,5 / 637	s
21 Operating temperature range		-30 ... +125	$^{\circ}\text{C}$
22 Shaft bearings		ball bearings, preloaded	
23 Shaft load max.:			
– radial at 40 000 rpm (4,5 mm from mounting flange)	22		N
– axial at 40 000 rpm (push-on only)	12		N
– axial at standstill (push-on only)	75		N
24 Shaft play:			
– radial $\leq$	0,05		mm
– axial $\equiv$	0		mm
25 Housing material		aluminium, black anodized	
26 Weight		81	g
27 Direction of rotation		electronically reversible	
Recommended values - mathematically independent of each other			
28 Speed up to ²⁾	$n_{\text{e max.}}$	91 000	rpm
29 Torque up to ^{1) 2)}	$M_{\text{e max.}}$	14,5	mNm
30 Current up to ^{1) 2)}	$I_{\text{e max.}}$	2,38	A

¹⁾ at 40 000 rpm

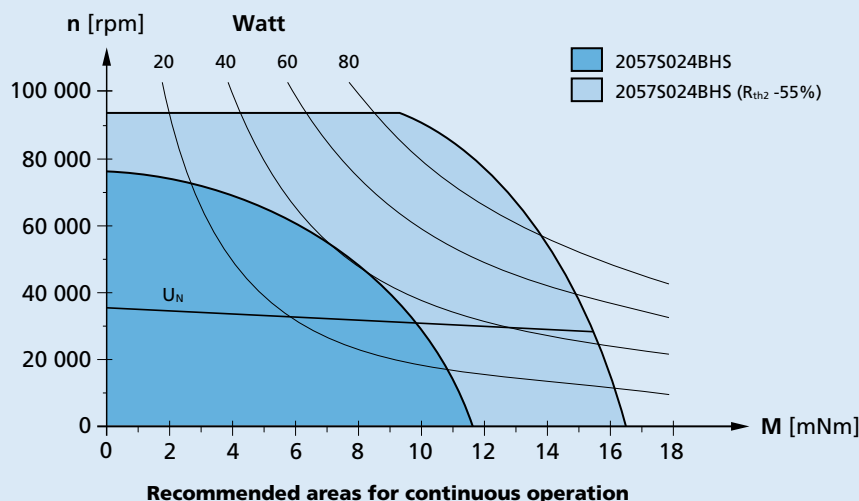
²⁾ thermal resistance $R_{\text{th } 2}$ by 55% reduced

Note:

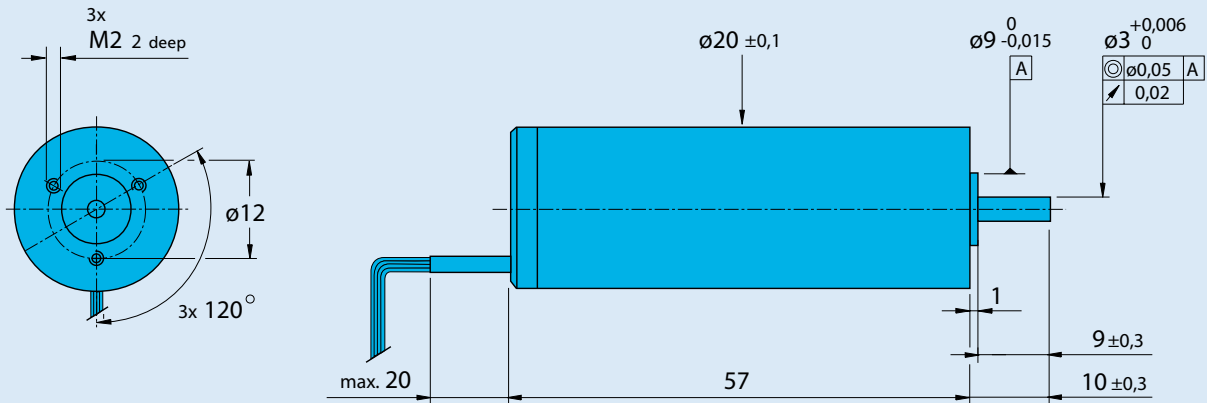
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{\text{th } 2}$ 55% reduced).

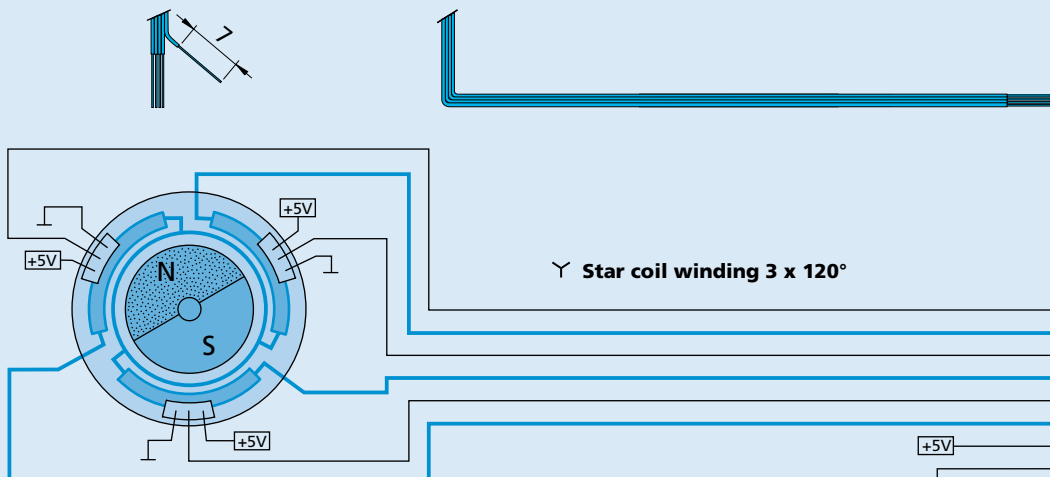
The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



2057 S 024 BHS



Cable and connection information



Cable

Single wires, material PTFE
Length 300 mm $\pm$ 15 mm
3 conductors, AWG 24
5 conductors, AWG 26

Note

Hallsensors digital
Number of pole pairs = 1

Connection

Function	Colour
A Hall sensor	green
A Phase	brown
B Hall sensor	blue
B Phase	orange
C Hall sensor	grey
C Phase	yellow
+5V	red
GND	black