

Brushless DC-Servomotors

14,9 mNm

Electronic Commutation, Sensorless

For combination with

Gearheads:

22/2, 22/5, 22/6, 22/7, 23/1, 26/1, 30/1, 38/3

Drive Electronics:

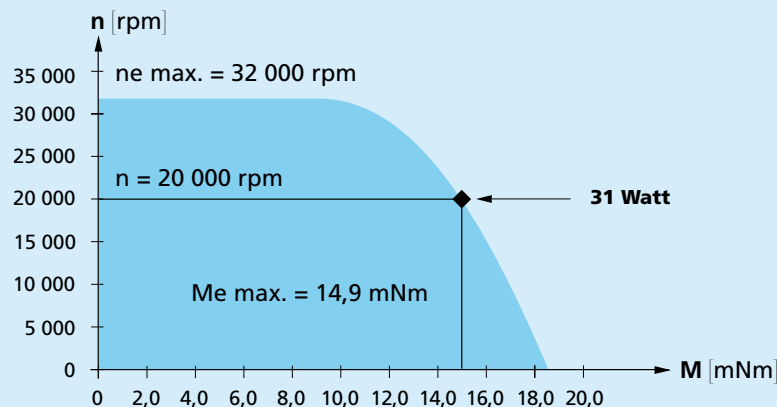
refer to "Combination Chart", pages 14-15

Series 2248 ... B

	2248 S	012 B	024 B	048 B	
1 Nominal voltage	U_N	12	24	48	Volt
2 Terminal resistance, phase-phase	R	0,92	3,29	13,94	Ω
3 Output power ¹⁾	$P_{2 \max.}$	30	31	31	W
4 Efficiency	$\eta_{\max.}$	73	74	73	%
5 No-load speed	n_o	15 700	16 200	15 900	rpm
6 No-load current (with shaft \varnothing 3,0 mm)	I_o	0,301	0,157	0,077	A
7 Stall torque	M_H	92	100	96	mNm
8 Friction torque, static	C_o	1,088	1,088	1,088	mNm
9 Friction torque, dynamic	C_v	$6,72 \cdot 10^{-5}$	$6,72 \cdot 10^{-5}$	$6,72 \cdot 10^{-5}$	mNm/rpm
10 Speed constant	k_n	1 339	690	339	rpm/V
11 Back-EMF constant	k_E	0,747	1,449	2,950	mV/rpm
12 Torque constant	k_M	7,13	13,84	28,17	mNm/A
13 Current constant	k_I	0,140	0,072	0,035	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	173	164	168	rpm/mNm
15 Terminal inductance, phase-phase	L	35	175	740	μH
16 Mechanical time constant	τ_m	7	7	7	ms
17 Rotor inertia	J	4,13	4,13	4,13	gcm ²
18 Angular acceleration	$\alpha_{\max.}$	223	242	232	$\cdot 10^3 \text{ rad/s}^2$
19 Thermal resistance	$R_{th 1} / R_{th 2}$	4,5 / 12,6			K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	7 / 710			s
21 Operating temperature range		- 30 ... +125			$^{\circ}C$
22 Shaft bearings		ball bearings, preloaded			
23 Shaft load max.:					
– radial at 3 000/20 000 rpm (6 mm from mounting flange)		30 / 17	for series 2248 S ... B		N
– radial at 3 000/20 000 rpm (4,5 mm from mounting flange)		29 / 16	for series 2248 U ... B		N
– axial at 3 000/20 000 rpm (push-on only)		16 / 10			N
– axial at standstill (push-on only)		57			N
24 Shaft play:					
– radial	\leq	0,015			mm
– axial	$=$	0			mm
25 Housing material		mounting face in anodized aluminium, housing in LCP (liquid cristal polymer)			
26 Weight		95			g
27 Direction of rotation		electronically reversible			
Recommended values - mathematically independent of each other					
28 Speed up to ²⁾	$n_{e \max.}$	32 000	32 000	32 000	rpm
29 Torque up to ^{1) 2)}	$M_{e \max.}$	14,5	14,9	14,7	mNm
30 Current up to ^{1) 2)}	$I_{e \max.}$	2,37	1,25	0,61	A

¹⁾ at 20 000 rpm

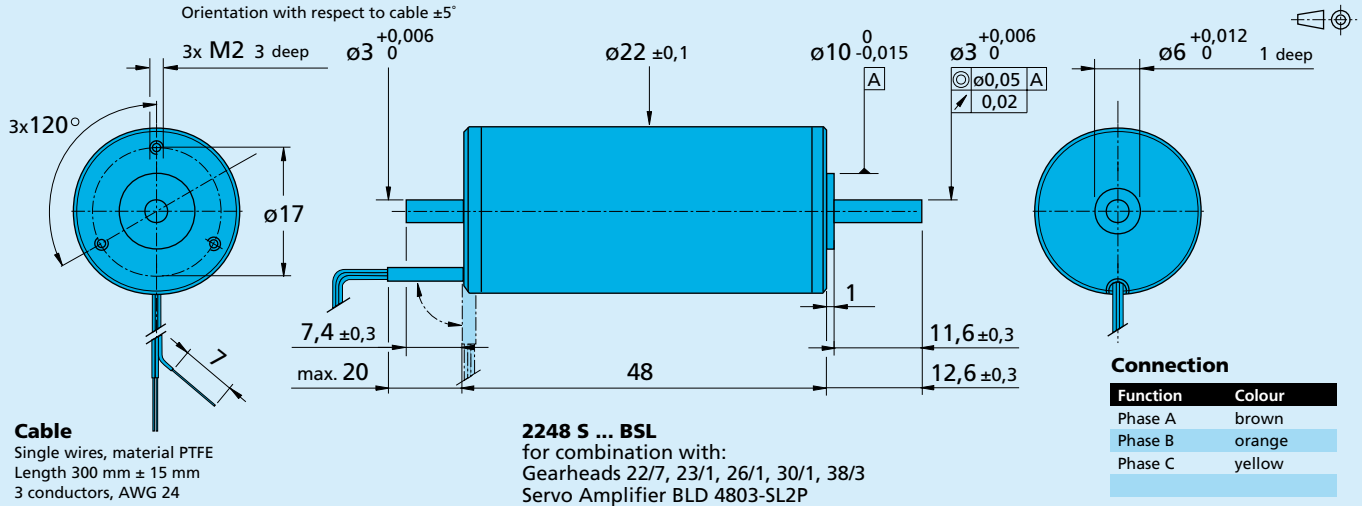
²⁾ thermal resistance $R_{th 2}$ by 55% reduced



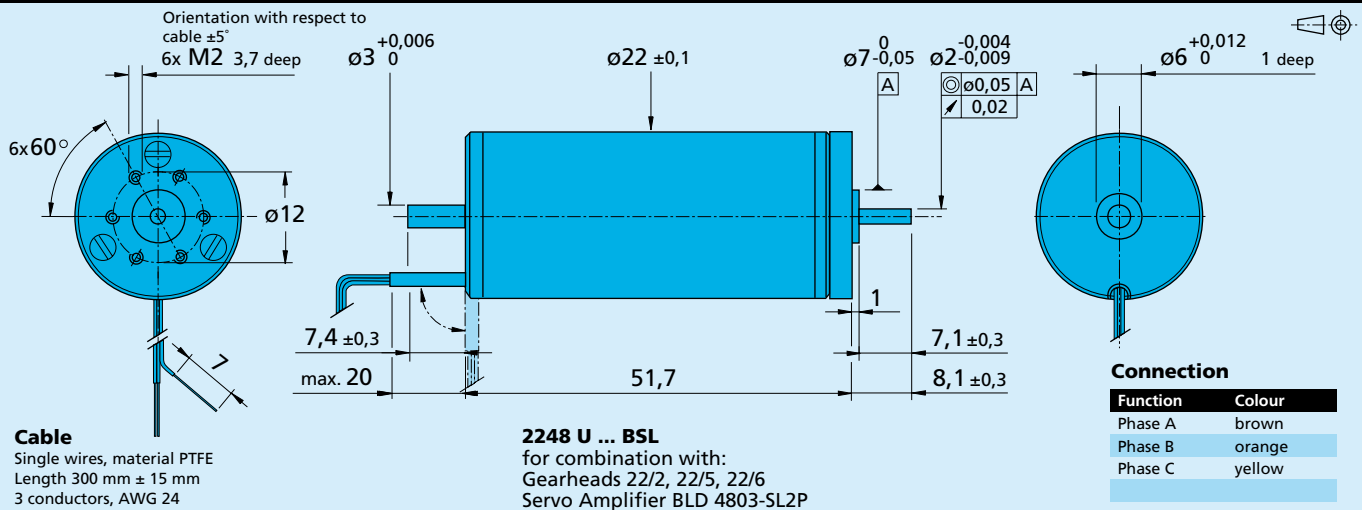
Recommended area for continuous operation

Options
 Motors with digital sensors:
 2248 S ... BDS, 2248 U ... BDS
 Motors with analog sensors:
 2248 S ... BAS, 2248 U ... BAS

2248 S ... BSL sensorless



2248 U ... BSL sensorless



2248 S ... BAS, 2248 S ... BDS, 2248 U ... BAS, 2248 U ... BDS with Hall sensors

