

# DC-Flat Motors · M21 and Gearbox G 10

**Specifications** Please consult your authorized sales representative for custom specifications.

Type			M 21-3	M 21-4	M 21-6	M 21-9	M 21-12	M 21-24
Nominal voltage	$U_N$	V	3	4	6	9	12	24
Terminal resistance	R	Ohm	11.7	21.7	48.5	92	145	225
Output power, max. at $U_N$	$P_{2max.}$	mW	170	160	165	185	220	220
No load speed	$n_o$	Upm	8120	7540	7810	7930	8530	13350
No load current	$I_o$	mA	13.7	12.3	5.7	7.5	4.5	5.5
Stall torque	$M_H$	mNm	0.8	0.8	0.8	0.9	1	1.7
Torque constant	$k_M$	mNm/A	3.34	4.73	7.0	10.0	12.7	16.2
Weight		g	10	10	10	10	10	10
<b>Operational conditions*</b>								
Motor	T	°C	-20 – +65					
Rotor, max. permissible	T	°C	-20 – +80					

\* at 25°C

Commutator	Precious metal
Magnet material	Neodym

Gearbox - Type G 10	ratio		36 : 1	108 : 1	187 : 1	270 : 1	562 : 1
Output torque, continuous, max.	$M_{2max.}$ [mNm]		20	30	40	40	40
Output torque, intermittent, max.	$M_{2max.}$ [mNm]		50	50	70	70	80
Direction of rotation			≠	=	≠	≠	=
Efficiency	$\eta$ [%]		72.9	65.6	59	59	53
Weight	g		7	7	7	7	7



### Product Benefits

- Small and compact – only  $\varnothing 17 \times 8.7$  mm
- Precious metal commutation system
- Very dynamic through the coreless rotor with extremely low inertia (0.22 gcm)
- Permanent magnet (Stator) for high power rate
- No cogging
- No iron losses; linear characteristics

