

3.5 Watt low inertia dc servo motor

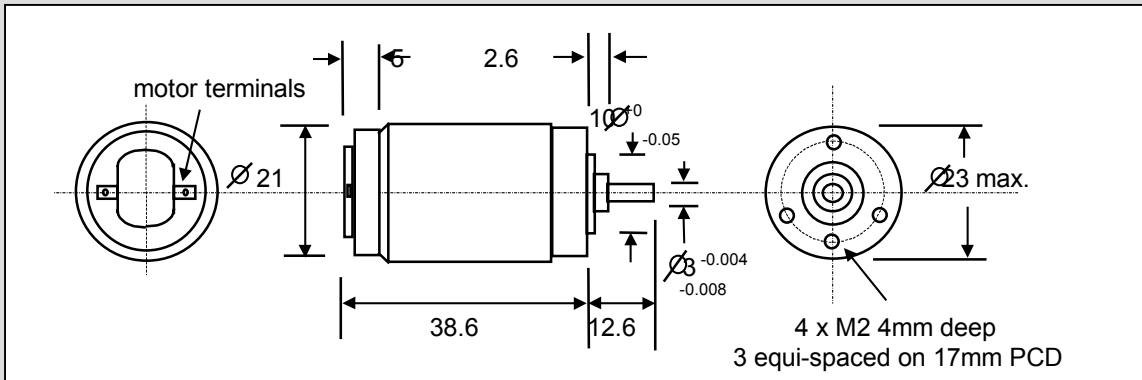
M23 series

The M23 series dc servo motor incorporates a low inertia skewed ironless rotor design thereby making it ideal for use in applications requiring accurate servo control. The unit features precious metal commutation which minimises internal friction losses and operating variations due to climatic conditions. The advanced design offers the following operating advantages:

- linear torque / current and speed / back emf constants
- rapid response due to high torque / inertia ratio
- high efficiency resulting in high power / volume ratio and wide possible speed range
- smooth operation over the full speed range
- may be fitted to a wide range of gearhead options
- available with integral dc tachogenerator (M23T)or incremental encoder (M23-I)



Dimensions: mm.



Specification:

M23 Motor- options:	M23-	-045	-06	-09	-12	-18	-24
Nominal Voltage (Vdc)		4.5	6	9	12	18	24
Maximum Output Power (Watts)		3.62	3.46	3.55	3.60	3.45	3.79
No-load speed (rpm)		7,200	7,200	7,400	7,800	7,400	7,600
Speed @ rated torque (rpm)		4,200	4,200	4,200	4,200	4,200	4,200
Rated Torque (Ncm)		0.7	0.7	0.7	0.7	0.7	0.7
Peak Torque (Ncm)		1.8	1.71	1.7	1.62	1.64	1.76
Typical No load current (Amps)		0.10	0.08	0.06	0.05	0.03	0.025
Rotor Inertia (Kgcm ²)		0.0048	0.0039	0.0037	0.0034	0.0036	0.0038
Mechanical time constant (milli secs)		20	17	17	17	17	17
Torque Constant (Ncm / A)		0.58	0.77	1.12	1.41	2.23	2.9
Voltage Constant (V / 1000 rpm)		0.606	0.804	1.17	1.47	2.34	3.03
Terminal Resistance (Ohms)		1.4	2.6	5.7	10.0	23.5	38.0
Rotor inductance (mH)		0.1	0.18	0.38	0.63	1.4	2.6
Commutation	precious metal -reinforced						
Bearings	sintered bronze sleeve (optional ball bearings)						
Maximum radial load @ 3000 rpm	2.5 N, (3 mm from mounting face)						
Maximum axial load @ 3000 rpm	0.3 N (20 N maximum @ standstill)						

Suitable dc servo amplifiers

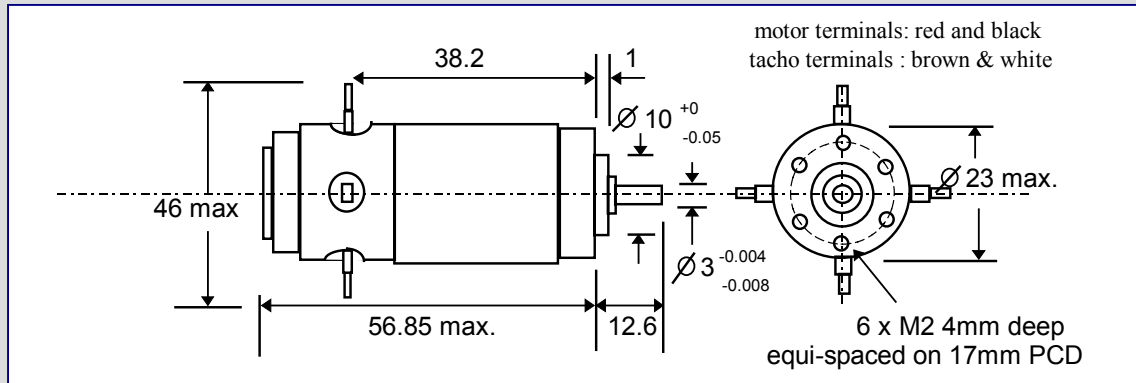
Servo motor	Rated Speed (rpm)	Rated torque (Ncm)	Peak Torque (Ncm)	using Amplifier	dc supply	Power Supply for AC operation
M23-12	5,000	0.5	1.3	MSE40-1	N/ A	MSE47 (up to 3 axes)
M23-12	5,000	0.5	1.64	MSE421	12 Vdc	
M23-24	2,000	0.4	0.85	MSE40	N / A	MSE47 (up to 6 axes)
M23-24	4,500	0.7	1.76	MSE421	24 Vdc	or MSE171 (up to 6 axes)

For optimum velocity control with analogue feedback techniques use M23T motor-tacho with above amplifiers. For optimum digital control use M23I motor-encoder with Euroamp MSE421 and PM600 Intelligent Controller

Low inertia dc servo motor-tacho M23T series

- The M23T series dc servo motor incorporates a dc tachogenerator thereby making it ideal for use in applications requiring accurate velocity servo control. The unit features precious metal commutation that minimises internal friction losses and operating variations due to environmental conditions.

Dimensions: mm.



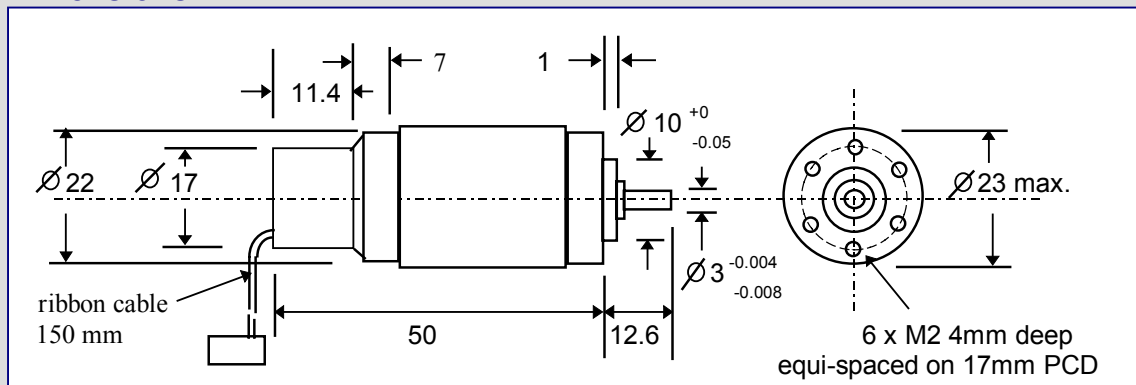
Specification:

M23 Motor-tacho options: M23T-	-06	-12	-24
Nominal Voltage (Vdc)	6	12	24
General specification as M23 motor apart from:			
Typical No load current (Amps)	0.11	0.075	0.040
Rotor Inertia (Kgcm ²)	0.0051	0.0051	0.0051
Mechanical time constant (milli secs)	23	23	23
Tacho details;			
Voltage Constant (V / 1000 rpm)	1.5 ± 2%		
Average Ripple (peak/peak)	7 % (Ripple frequency: 14 cycles / rev.)		
Terminal Resistance (Ohms)	260 (Load resistance > 25 K Ohms)		
Max. continuous speed (rpm)	5000		

DC servo motor encoder M23 I..B series

- The M23 I series dc servo motor incorporates an incremental encoder providing dual track output which is either TTL or CMOS compatible.
- The unit is ideal for use in digital servo control applications requiring rapid response and accurate positioning.
- When fitted with optional gearheads the unit provides increased torque and resolution combined with compact dimensions.

Dimensions: mm.



Specification:

M23 Motor-encoder options: M23 I-	-045	-06	-09	-12	-18	-24
Nominal Voltage (Vdc)	4.5	6	9	12	18	24
General specification as M23 motor apart from:						
Typical No load current (Amps)	0.15	0.11	0.09	0.075	0.045	0.040
Rotor Inertia (Kgcm ²)	0.0048	0.0039	0.0037	0.0034	0.0036	0.0038
Mechanical time constant (milli secs)	20	17	17	17	17	17
Encoder options	pulses/rev	tracks	signal	Supply	consumption	
I 20B	15	2	TTL or CMOS compatible	5-15 Volt	5mA @ 5V	
I 21B	16	2	TTL or CMOS compatible	5-15 Volt	5mA @ 5V	