

DC-Micromotors

Graphite Commutation

9,19 mNm
9,08 W

Series 1741 ... CXR

Values at 22°C and nominal voltage		1741 U	006 CXR	012 CXR	018 CXR	024 CXR	
Nominal voltage	U_N		6	12	18	24	V
Terminal resistance	R		1,28	5,72	14,7	26,4	Ω
Rotor inductance	L		35,2	134	338	606	μH
Efficiency, max.	η_{max}		73	75	75	76	%
No-load current, typ.	I_0		0,055	0,0282	0,0177	0,0132	A
No-load speed	n_0		7 130	7 630	7 300	7 320	min^{-1}
Stall torque	M_H		31,1	28,3	26,6	26,6	mNm
Rotor inertia	J		1,8	1,6	1,5	1,5	gcm^2
Friction torque	M_R		0,4	0,4	0,4	0,4	mNm
Torque constant	k_M		7,33	14,3	22,7	30,4	mNm/A
Speed constant	k_n		1 300	668	420	314	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$		228	268	273	273	$\text{min}^{-1}/\text{mNm}$
Thermal resistance:							
– winding to housing	R_{th1}	7,2					K/W
– housing to ambient (external plastic flange)	$R_{\text{th2 p}}$	21					K/W
– housing to ambient (external metal flange)	$R_{\text{th2 m}}$	3,8					K/W
Thermal time constant:							
– winding	τ_{w1}	9,8					s
– housing (external plastic flange)	$\tau_{w2 p}$	410					s
– housing (external metal flange)	$\tau_{w2 m}$	74					s
Operating temperature range:							
– motor		-30 ... +100					°C
– winding, max. permissible		+125					°C
Shaft bearings		ball bearings, preloaded		sintered bearings			
Shaft diameter		2		2			mm
Radial shaft load max.:							
– dynamic at 3 000 min^{-1} (3 mm from bearing)		8		1,5			N
Axial shaft load max.:							
– dynamic at 3 000 min^{-1}		0,8		0,2			N
– static (shaft unsupported)		10		20			N
– static (shaft supported)		450		450			N
Shaft play, max.:							
– radial		0,015		0,03			mm
– axial		0		0,2			mm
Speed up to	n_{max}	9 000					min^{-1}
Number of pole pairs		1					
Mass		45					g
Housing material		steel, zinc galvanized and passivated					
Magnet material		NdFeB					
Rated values for continuous operation							
Rated torque	M_N		9,19	8,73	8,75	8,79	mNm
Rated current (thermal limit)	I_N		1,48	0,72	0,454	0,341	A
Rated speed	n_N		4 190	4 310	3 840	3 840	min^{-1}

Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The $R_{\text{th2 p}}$ value has been reduced by 25%.

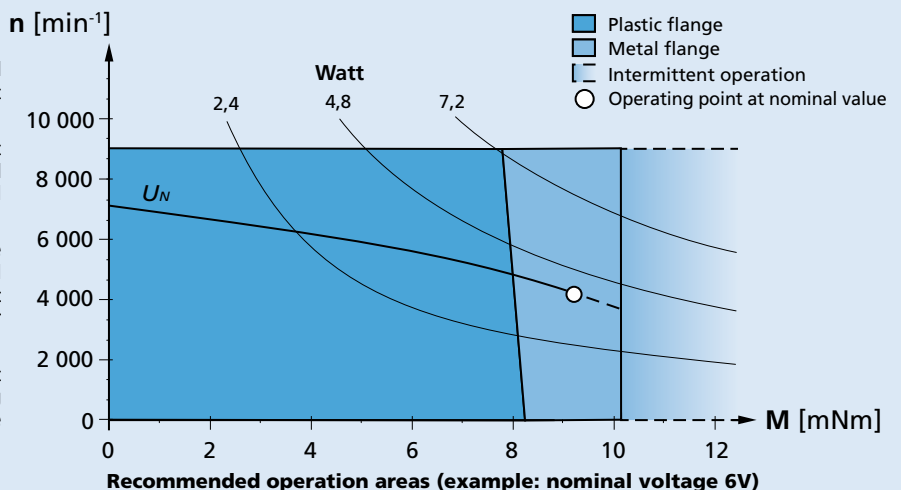
Note:

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 different conditions of thermal coupling, i.e. mounted respectively on a plastic flange and a metal flange.

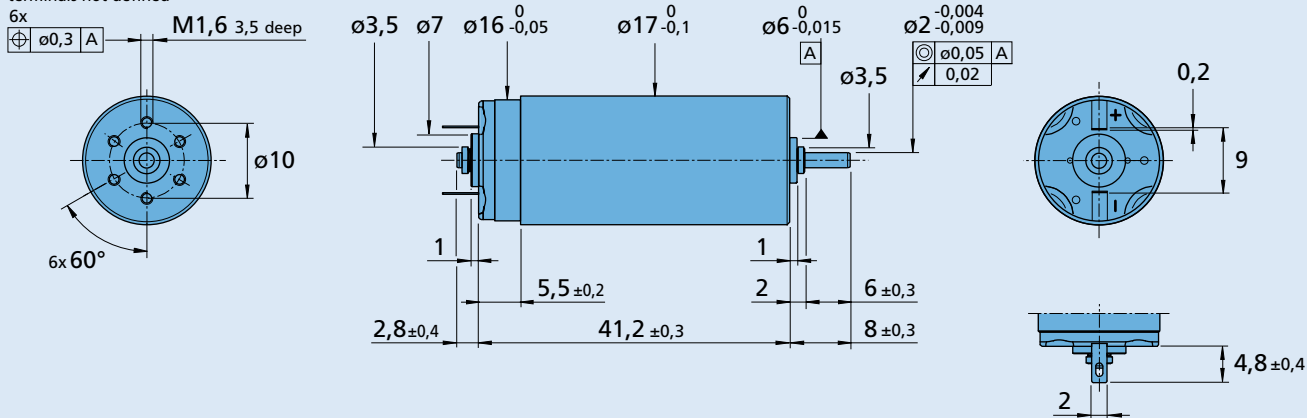
The nominal voltage (U_N) curve shows, up to the thermal limit, the operating point at nominal voltage for the motor mounted on a plastic flange. Higher torque can be achieved by further reducing the thermal resistance.

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.



Dimensional drawing

Orientation with respect to motor terminals not defined



1741 U ... CXR

Options

Example product designation: **1741U012CXR-217**

Option	Type	Description
L	Twin Leads	For motors with twin leads (PVC), length 150 mm, red (+) / black (-)
4924	Twin Leads	For motors with twin leads (PVC), length 300 mm, red (+) / black (-)
X4924	Twin Leads	For motors with twin leads (PVC), length 600 mm, red (+) / black (-)
4925	Twin Leads	For motors with twin leads (PVC), length 150 mm, red (+) / black (-), with connector AMP 179228-2
X4925	Twin Leads	For motors with twin leads (PVC), length 300 mm, red (+) / black (-), with connector AMP 179228-2
Y4925	Twin Leads	For motors with twin leads (PVC), length 600 mm, red (+) / black (-), with connector AMP 179228-2
F	Single Leads	For motors with single leads (PTFE), length 150 mm, red (+) / black (-)
123	Encoder combination	Motor with rear end shaft for combination with Encoder IE2, IEH2 and IEH3
217	Bearings	Motor with sintered bearings

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
15/10 16/7 17/1 20/1R	IE2-1024 IEH2-4096 IEH3-4096 IEH3-4096L	SC 1801 P SC 1801 S SC 2402 P SC 2804 S MC 3001 B MC 3001 P MC 3602 B MC 3603 S MC 5004 P	To view our large range of accessory parts, please refer to the "Accessories" chapter.