

## CL 29 Coreless DC motor

## 3 Watt

### Features

- No Iron loss; smooth speed
  - Smooth operation
  - Low inertia rotor, for rapid response
  - Special shafts
  - Encoder
  - Other supply voltages
  - Spur or planetary gearhead
  - Ball Bearings
- Options:**
- Connecting wires
  - Integrated EMI suppression
  - Tacho



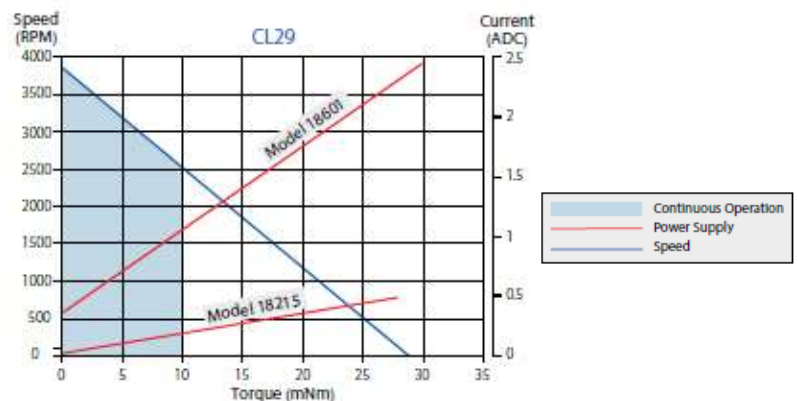
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### Motor data

Motor order number	Shaft ø3 mm	9904 120 18601	9904 120 18602	9904 120 18603	9904 120 18105	9904 120 18605	9904 120 18606	9904 120 18215	
	Shaft ø2 mm	9904 120 18611	9904 120 18612	9904 120 18613	9904 120 18614	9904 120 18615	9904 120 18616	9904 120 18617	
Nominal voltage		6	7.2	9	12	15	18	24	V
Nominal torque		10	10	10	10	10	10	10	mNm
Nominal speed		2680	2550	2680	2440	2380	2680	2470	rpm
Nominal current		775	620	515	370	290	260	185	mA
No load speed		4010	3850	3990	3840	3750	4010	3840	rpm
No load current max.		67	52	45	31	24	22	16	mA
EMF at 3000 rpm		4.35	5.44	6.53	9.07	11.6	13.1	18.1	V
Torque constant		13.9	17.3	20.8	28.9	37.0	41.6	57.7	mNm/A
Terminal resistance		2.7	4.2	6.1	12.5	20.1	24.5	49.0	Ω
Starting torque at nominal voltage		30	30	30	27	27	30	28	mNm
Starting Current at nominal voltage		2.21	1.73	1.47	0.96	0.75	0.73	0.49	A
Rotor inductance		0.2	0.32	0.46	0.89	1.46	1.84	3.55	mH
Rotor moment of inertia		0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	0.9x10 <sup>6</sup>	kgm <sup>2</sup>
Mechanical time constant		13	13	13	13	13	13	13	ms
Thermal resistance winding-housing		5.2	5.2	5.2	5.2	5.2	5.2	5.2	K/W
Thermal resistance housing-amb.		16.3	16.3	16.3	16.3	16.3	16.3	16.3	K/W

### General data

Type of bearings	sleeve	
Commutation system	precious	
Maximum radial load	5	N
Maximum axial load (static)	0.5	N
Ambient temp. range operating	-10/+60	°C
Ambient temp. range storage	-40/+70	°C
Mass of motor	125	g



### CL Series Dimensions — mm (in)

#### CL29

