SPECIFICATION OF DC MOTOR
9904 120 16206

1. Type indication.

1.1. Spark suppression	None
1.2. Direction of rotation	Reversible
1.3. Rotor	Ironless (9 * 96, 0.150mm)
1.4. Nominal voltage	24 Vdc
1.5. Nominal speed	2800 rpm
1.6. Nominal load	10 mNm

2. Electrical data of motor.

2.1. Emf at 3000 rpm	22.0 V ± 10%
2.2. Voltage constant	7.3 mV/rpm ± 10%
2.3. Torque constant	70.0 mNm/A ± 10%
2.4. Rotor resistance	24.5 Ω ± 8%
2.5. Rotor inductance at 1000 Hz	3.3 mH

3. Thermal data.

3.1. Temperature coefficient of:	
3.1.1. Motor Emf	- 0.02 % / K
3.1.2. Resistance	+ 0.4 % / K
3.2. Thermal resistances:	
3.2.1. from winding to housing (Rth1)	6 K/W
3.2.2. from housing to ambient (Rth2)	8 K/W
3.2.3. from winding to ambient	15 K/W
3.3. Thermal time constant of motor without heatsink.	15 min

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CLASS NO.	SPEFICICATION DC MOTOR		9904 120 16206			
SEE						
SHEET						
101_1	SUPERS.	6	190 — 1	10	A4	
NAME JP ROTH	DATE 15-JUL-92	PROPERTY OF	AIRPAX® BRUSSELS DIVISION			
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4. Electromechanical data.

4.1. No load.	
4.1.1. Voltage	24 V
4.1.2. Speed	3300 rpm ± 10%
4.1.3. Current	13 mA (max.)
4.1.4. Starting voltage	0.5 V (max.)
4.2. Loaded.	
4.2.1. Voltage	24 V
4.2.2. Torque	10 mNm
4.2.3. Speed	2800 rpm ± 10%
4.2.4. Current	150 mA ± 15%
4.3. Starting torque	70 mNm ± 20%
4.4. Mechanical time constant	19.6 ms (typical)
4.5. Typical curves	see sheet 112 - 2
4.6. Insulation resistance between winding and housing according to IEC 335-1 (500 VDC)	> 2 MΩ.

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5. Mechanical data.

5.1. Dimensions	see sheet 112 - 1
5.2. Axial play	see sheet 112 - 1
5.3. Wobble of the shaft	see sheet 112 - 1
5.4. Weight	205 gr.
5.5. Housing	Steel
5.6. Operating position	All positions permitted
5.7. Brushes	Metal
5.8. Bearings	Slide bearings
5.9. Static friction	0.9 mNm
5.10. Dynamic friction	0.7 mNm
5.11. Viscous damping constant	$3.5\ 10^{-3}$ mNm s/rad
5.12. Mass moment of inertia	$3.92\ 10^{-6}$ Kgm²
5.13. Connections	Leads

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6. Noise and vibration.

6.1. Measuring conditions

Motor position	Shaft horizontal
Noise level of measuring room	max. 30 dB
Microphone position	125 mm above motor shaft
Load	None
Speed	3000 rpm
6.2. Noise level measured	50 dB(A) max.

7. Temperatures.

7.1. Ambient	- 10 ... + 60 °C
7.2. Max housing temperature	80 °C
7.2. Storage	- 40 ... + 70 °C

8. Remarks.

If not otherwise specified, the measurements have to be done under the following conditions.

8.1. Motor temperature	22 ± 5 °C
8.2. Atmospheric pressure	860 - 1060 HPa
8.3. Relative humidity	45 - 75 %
8.4. Radial force	none
8.5. Axial force	none

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GEE						
SHEET		6	190 — 4	10	A4	
101_1						
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9. Limiting values.

9.1. The following maximum values can be applied continuously, however they reduce the life of the motor considerably.

9.1.1. Voltage	30 V
9.1.2. Load	20 mNm
9.1.3. Current	275 mA
9.1.4. Peak current	1200 mA (frequency : 1 Hz) (pulse width max : 10ms)
9.1.5. Speed	4000 rpm
9.1.6. Output power	5 W
9.1.7. Radial force	7 N
9.1.8. Axial force	0.4 N

9.2. The following maximum should never be exceeded.

9.2.1. Voltage	40 V
9.2.2. Load	30 mNm
9.2.3. Peak current	1500 mA
9.2.4. Speed	6000 rpm
9.2.5. Output power	10 W
9.2.6. Axial force	50 N
9.2.7. Radial force	50 N
9.2.8. Winding temperature	120°C

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SEE SHEET 101_1	6 190 — 5 10	
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10. Life.

10.1. Continuous running with radial load

10.1.1. Voltage	24 V
10.1.2. Load	10 mNm
10.1.3. Radial force	5 N, 8 mm from mounting plane
10.1.4. Axial force	none
10.1.5. Motor position	All positions
10.1.6. Cycle	3 h IN 1 h OUT
10.1.7. Life B10 value	› 1000 h.

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SEE						
SHEET						
109_1		SUPERSEDES	6	190 — 6	10	A4
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