

Type testreport three phase squirrel-cage motors DM1-90M1-90L4



Windg. calc. card.: _____	motor No. <u>2E+09</u>			
type: <u>M1-90L4</u>	Output: <u>1,5</u> kW	Duty type: <u>S1</u>		
Voltage: <u>400</u> V	conn. <u>Y</u>	frequency: <u>50</u> Hz	cosφ <u>0,79</u>	IM <u>B3</u>
current: <u>3,49</u> A	speed: <u>1390</u> rpm	eff. <u>78,5</u> %	M of I	kgm ²
remarks: <u>PTC150°C inside the motors</u>				

Statorwinding resistance measurement (cold) :

Connection: <u>Y</u>	$R_{u1-v1} :$ <u>7,76</u> Ω	
Winding temp: <u>15,0</u> °C	$R_{v1-w1} :$ <u>7,76</u> Ω	$R_{av} =$ <u>7,76</u> Ω ;
room temp: <u>15,0</u> °C	$R_{w1-u1} :$ <u>7,75</u> Ω	

No-load test

$$R_{begin} = \frac{8,70}{\quad} \Omega$$

$$R_{end} = \frac{8,69}{\quad} \Omega$$

				Losses		
U_0	I_0	P_0	$\cos\phi_0$	V_{cu1}	V_{fe}	V_w
V	A	W		W	W	W
473	3,7	479	0,158	179	290	10
438	2,8	295	0,139	102	183	10
400	2,1	191	0,131	58	123	10
358	1,7	133	0,126	38	85	10
310	1,3	96	0,138	22	64	10
253	1,0	64	0,146	13	41	10
179	0,7	36	0,166	6	20	10
127	0,5	24	0,218	3	11	10

sound pressure level in dB(A) (at 1m) : 49,5

sound power level in dB(A) : 57,5

vibration level (mm/s) : $x = \frac{1,0}{\quad}$ $y = \frac{0,8}{\quad}$ $z = \frac{0,9}{\quad}$

Temperature rise test

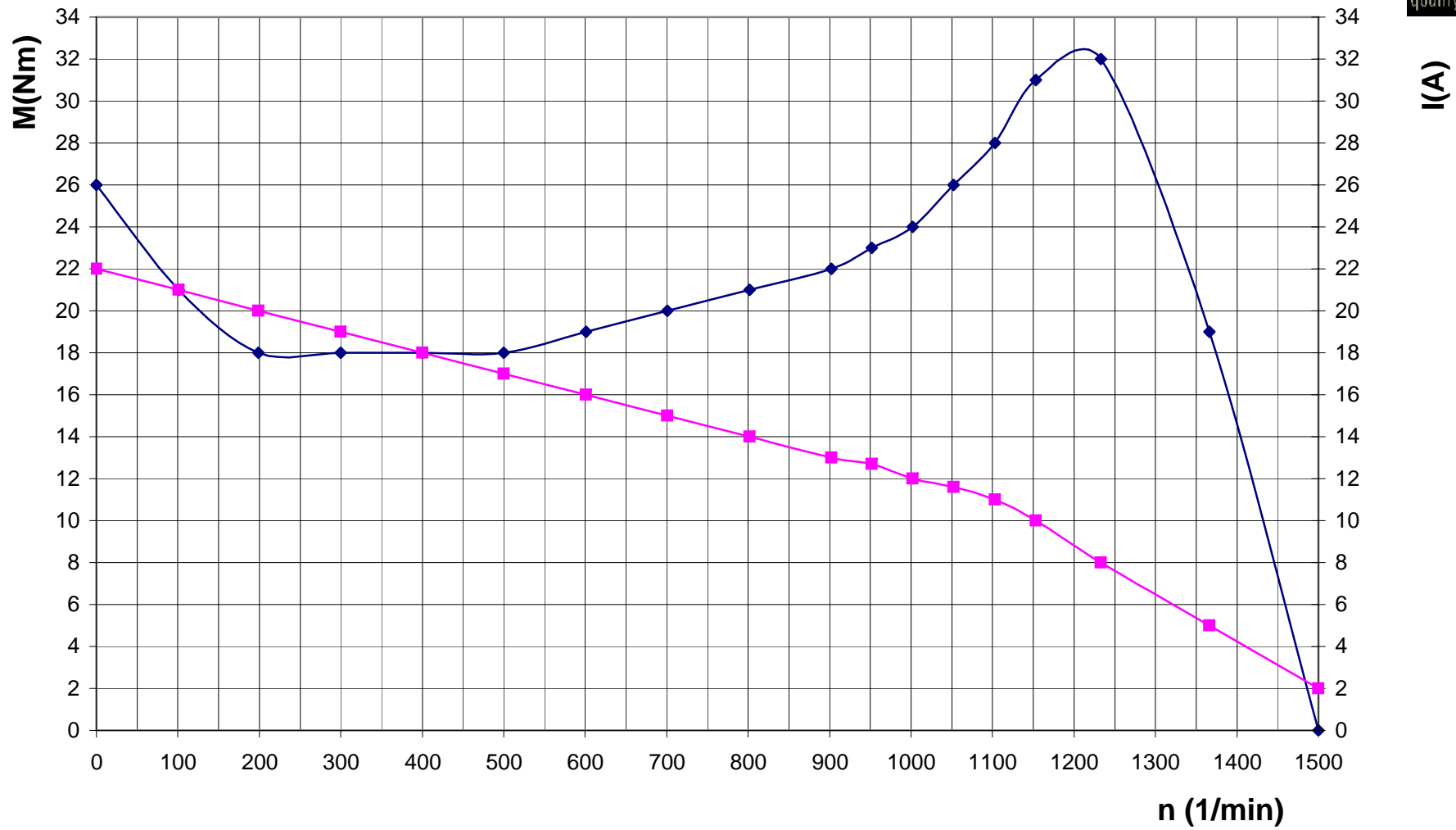
voltage : 400 V frequency: 50 Hz current 3,5 A connection : Y

		Room Temp. °C	$R_{wdg.}$ Ω	wdg. Temp. by $R_{wdg.}$	wdg. temp. rise (K)	measured Temperature (°C) with ETD*			
According to IEC 34 -1	time					wdg.	bearing DE	bearing NDE	frame
begin	8.40	14,0	7,73	14,0				14,0	
	10.15	14,0						41,0	
End	10.45	14,0	9,21	61,8	47,8	51,0	51,0	41,0	

* ETD = embedded temperature detector

EFF 2

DM1-90L4 ST.400V 50HZ 1,5kW





Load test DM1-90L4

frequency : 50 Hz connection : Y _{dg,av} = 61,6 °C R_{av} = 9,20 Ω

P ₂ approx. %	U V	I A	P ₁ kW	cosφ	n min ⁻¹	s %	Losses						P ₂ kW	η %
							V _{fe} W	V _{cu,1} W	V _e W	V _{cu,2} W	V _w W	V _v W		
25	400	2,2	0,580	0,381	1480	1,33	123	67	4	5	10	209	0,371	63,9
50	400	2,5	0,991	0,572	1459	2,73	123	86	5	21	10	246	0,745	75,2
75	400	2,9	1,429	0,711	1437	4,20	123	116	7	50	10	306	1,123	78,6
100	400	3,5	1,906	0,786	1412	5,87	123	169	10	94	10	406	1,500	78,7
125	400	4,2	2,434	0,836	1383	7,80	123	243	14	160	10	551	1,883	77,4
150	400	5,1	3,029	0,857	1346	10,3	123	359	20	259	10	772	2,257	74,5
100	440	3,7	2,002	0,710	1425	5,00	188	189	11	81	10	478	1,524	76,1
100	420	3,6	1,963	0,750	1418	5,47	150	179	10	89	10	438	1,525	77,7
100	380	3,7	1,965	0,807	1393	7,13	103	189	11	119	10	431	1,534	78,1
100	360	3,7	1,967	0,853	1377	8,20	89	189	11	138	10	436	1,531	77,8

Torque/speed and Current/speed test

voltage : 400 V frequency: 50 Hz connection : Y

n min ⁻¹	T Nm	I A	n min ⁻¹	T Nm	I A	n min ⁻¹	T Nm	I A
1500	0	0,6	1002	24	12	500	18	17
1366	19	5,0	952	23	12,7	400	18	18
1233	32	8,0	902	22	13	300	18	19
1153	31	10	802	21	14	199	18	20
1103	28	11	701	20	15	101	21	21
1052	26	12	601	19	16	0	26	22

Locked rotor test

wdg. temp. °C	U V	I A	P ₁ kW	cosφ	T Nm
15,0	400	21,6	10,561	0,706	32,2
29,3	350	18,0	7,622	0,699	23,8
34,2	300	14,6	5,216	0,688	16,6
35,7	250	11,5	3,314	0,666	10,7
34,6	200	8,7	1,886	0,626	6,1
30,2	100	3,7	0,340	0,531	1,1



Date:	#####
Name:	HvD
Signature:	